

Ideas from Europe for Customizing Your Car

# MOTOR TREND

The Car Owners Magazine

Combined with Auto Sportsman

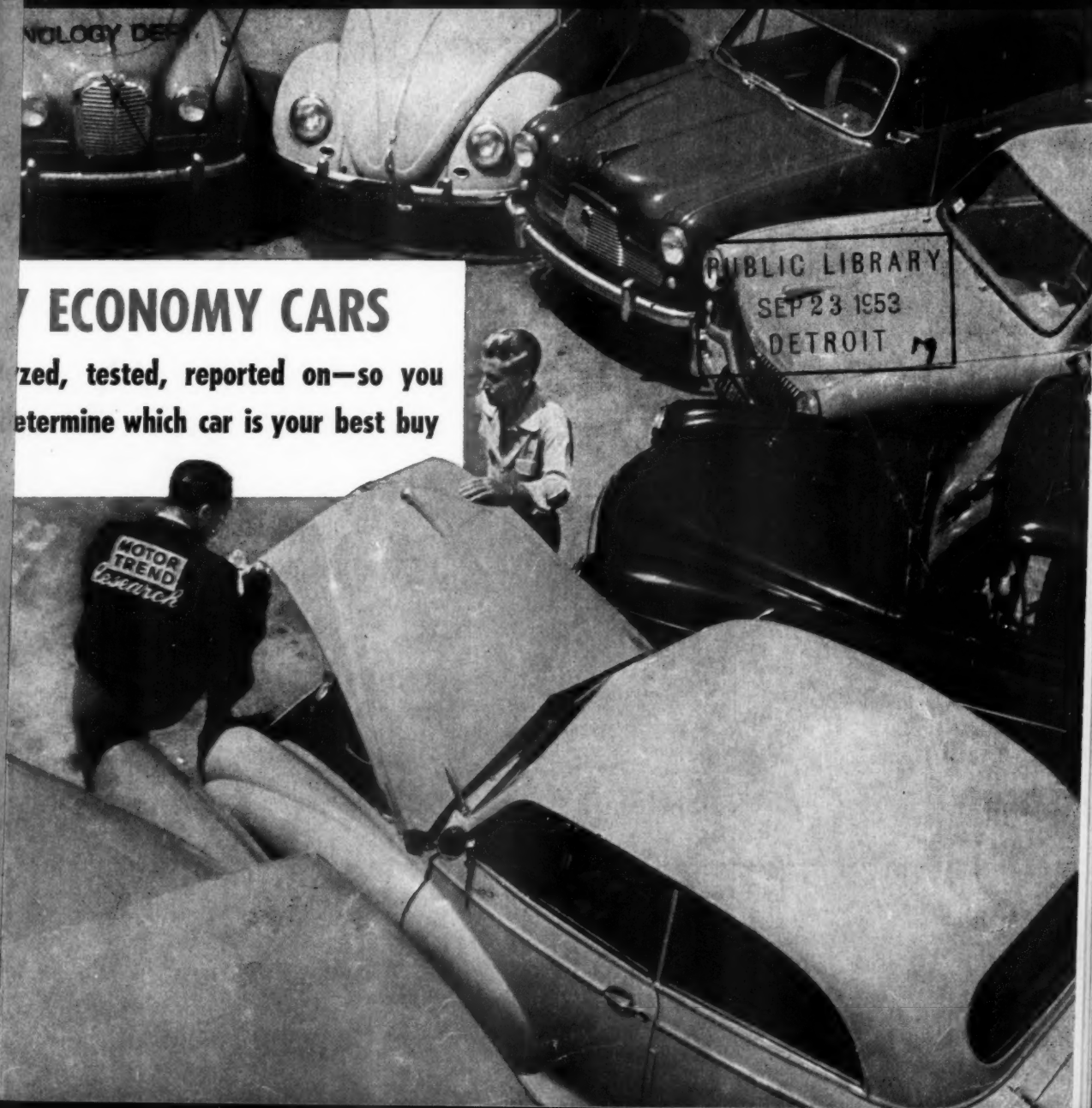
Those Shocking Seat Covers

OCTOBER 1953 25c

NOLOGY DEF

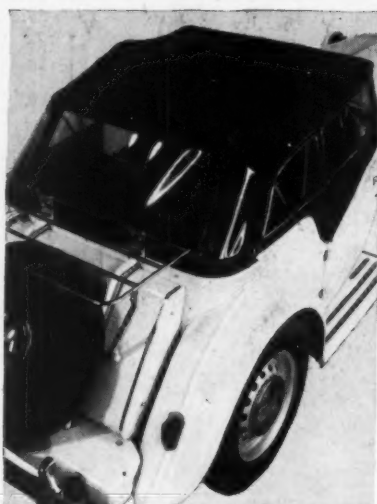
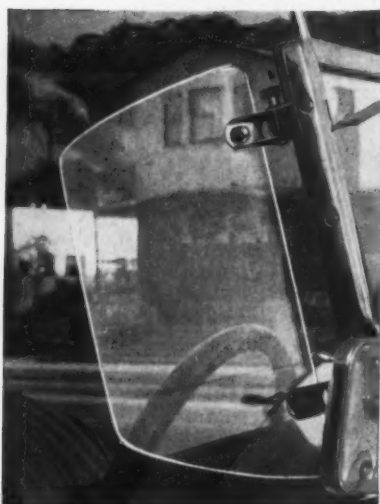
## ECONOMY CARS

ized, tested, reported on—so you  
etermine which car is your best buy



# FOR Full Protection

## FROM FALL'S CHANGEABLE WEATHER



## Equip your sports car with Arnolt Accessories



**ARNOLT TONNEAU COVERS** keep the cockpit dry and clean. Zipper separator permits keeping the passenger side covered while providing free access to the driver's seat.

**WINDWING-WINDSCREEN** (See upper left)—Cold winds that blow up suddenly on otherwise sunny fall days cannot bother you when your car is equipped with Arnolt custom-tailored Windwing-Windcreens. Adjustable and non-rattling. They fold flat against windshield when top is up.

**ARNOLT MG TOPS**—can be quickly raised in emergencies and assure a snug, watertight fit. For deluxe appearance, choose Arnolt Tops in ARNOCOLOR material, a scientifically formulated combination of many coats of non-porous vinyl over the best treated cotton fabrics. It lasts up to 3 times as long as ordinary fabric. Available in maroon, blue, green, black or tan.

**ARNOLT SPORTS CAR HEATER**—This 12-volt heater provides the right flow of warm air for any occasion—for top-down driving on chilly fall days or top-up motoring in mid-winter. Supplied with tailored kit and complete instructions for easy installation in the MG.

Write for the name of the nearest Autocessories dealer and the Arnolt Autocessories catalog describing these and other accessories. (Please enclose 25c to cover cost of mailing). Address Dept. 10MT.

**Autocessories, Ltd.**  
WARSAW, INDIANA, U. S. A.

**DIVISION OF  
ARNOLT CORPORATION**



# European Distinction

for America's  
Glamour Queen



## New High Style Continental Kit now available for the sensational 1953 Studebaker Starliner

Hailed by auto enthusiasts the world over as the ideal combination of modern Italian styling, and Yankee mass production technique, the new Studebaker was "made to order" for this top-quality Continental Kit. The kit is furnished complete, including all features and parts as detailed below, for **\$149<sup>50</sup>**

only. Handsome wire wheel trim discs, similar to those shown, fit any 15" or 16" wheel (specify) only \$15.00 each.

### Newhouse Deluxe Custom Continental Kits

Style experts agree the deluxe kit gives your car the longer, lower lines that mark the ultimate touch of sophistication. These kits are the finest obtainable; don't confuse them with the many inferior models now on the market. Fabricated from heavier metal, these handsome Deluxe Kits are complete, including, as necessary, drop center gravel guard, full metal tire cover, special control lock release, chrome trim welts, special chrome hub cap, license light, safety lock assembly, rugged wheel mount brackets, heavy bumper extensions and all nuts and bolts together with easy instructions.



Ford '49-'53 \$69.50  
Chev. Styleline '49-'53 69.50  
Consul & Zephyr '52-'53 98.50  
Willys Aero '52-'53 116.50  
Plymouth '53 129.50  
Dodge '53 134.50

Studebaker '51-'52 \$134.50  
Pontiac '50-'53 139.50  
Chrysler '53 Wind. & Nykr. 139.50  
DeSoto '53 139.50  
Studebaker '53 149.50  
Mercury '51-'53 149.50  
Olds. 88 '51-'53 149.50



Olds. 98 '53 \$154.50  
Buick '52-'53 Sup. & Rdm. 154.50  
Chrys. '53 Imp. 159.50  
Packard '51-'53 159.50  
Lincoln '51-'53 164.50  
Cadillac '50-'53 Disc Whl. 169.50  
Cadillac '53 Wire Whl. 189.50

Chrome tire bands for any of above \$20.00 extra.

Send 20% deposit; balance C.O.D.

### Newhouse Special Low Price Continental Kit

Customize, glamorize your car for a rock-bottom price that everyone can afford! These beautiful all-metal economy kits have a unique "built in" appearance that looks like expensive custom work. They are precision made of finest materials to give lasting satisfaction. Our special, low-budget price is only possible because in this installation the spare tire remains in its original position in the trunk. (No one knows this but you!) In addition to the metal tire cover, the price includes chrome wheel disc, license holder, chrome lights, and all other parts as required. Installation is an easy few minutes' job... requires only 1/4" holes and no alterations to the car body.



Chev. '49-'52 (exc. Fltline) Merc. '49-'51  
Ford '49-'51 Olds. '50-'52  
Linc. '49-'51 Pont. '49-'52  
(exc. Cosmo.) Willys '52-'53

**\$29<sup>95</sup>**

Send \$5.00 Deposit; balance C.O.D.

Buick '53 Dodge Dip. '53  
Cad. '50-'53 Ford '52-'53  
Chev. '53 Hudson Jet '53  
Chrys. '53 Linc. '52-'53  
DeSoto '50-'53 Merc. '52-'53



Olds. '53  
Plym. '50-'52  
Pont. '53  
Stude. '53  
(exc. 4-dr.)

**\$39<sup>95</sup>**

#### Dear Customer:

You can now order all your special equipment—heads, manifolds, cam gauges, etc., (any item for any car... any brand) direct BY MAIL from the great Newhouse stockrooms. Just send a deposit and state your needs clearly—pay the balance C.O.D. All prices are strictly competitive.



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Power and Economy products for all cars 23



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(Leading Mail order Distributor for over  
19 years)

### DUAL INTAKE MANIFOLD FOR M.G.

Bell Dual Intake Manifold for M.G. gives up to 3 H.P. increase by Dynamometer Test. Increases M.G. performance. Motor Efficiency. Precisely Engineered. Highly Polished. Nicely Finned. Complete with 53 Ford 6 Carb's, linkage, Hellings Air Cleaner, ready to install... \$62.50.

Manifold including linkage and fuel line... only \$29.95

### BELL M.G. VALVE COVER

BELL M.G. VALVE COVER. Made of Heavy cast Aluminum. Beautifully designed and highly polished. The top is finned and corners are radiused to increase engine appearance. Prevents oil leaks and deadens engine noise. \$19.95



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Dual Exhaust System for M.G. Cuts back pressure up to 50%. Can easily produce gains of up to 10% or more in road Horse Power—Increases acceleration—Gives smoother running motor at Low or High speeds—Longer Engine Life—No Engine adjustments or alterations required—Complete assembly, Includes—Two cast iron Manifolds, Nicely radiused steel Head Pipes, two straight thru 1 1/2" ga. steel packed mufflers, properly sized tail pipes, all necessary gaskets with instructions required for installation. Complete assembly—\$79.50.

**BELL** AUTO PARTS INC.  
3633 E. Gage Ave. Bell 710, Calif.  
Representing all Nationally Advertised Speed and Power Manufacturers.

# the Glove Compartment

**YOU WILL NOTE** that Harry Cushing no longer conducts Operation Detroit. Harry is now in charge of public relations for Chrysler Corporation's styling and engineering show, "New Worlds in Motion," formerly "New Worlds in Engineering." During next few months this show will be seen in Springfield, Mass. (Sept.), Boston, Mass. (Oct.), Washington, D.C. (Nov.), Norfolk, Va. (Dec.), Baltimore, Md. (Jan.), Tampa, Fla. (Feb.) Good luck on your new job, Harry.



**EVER WONDER** what happened to runningboards? Here's an inventor (printer Max Hoffman, Los Angeles, Calif.) who might capitalize on their disappearance. He's come up with idea (patented) of retractable chromed steel extension, which when up protects side of car against minor impacts. When down, provides step for passengers. Device is hydraulically con-

trolled when door opens. By warding off impacts, owner says driver and passenger are protected against collisions that "... may distort door structures and imprison occupants of vehicle in body of vehicle." For further discussion on car safety, see article on page 19.

**FOND OF TOURING?** Eighth Annual revival of Glidden Tour takes place September 13th to 19th. Starts at Cleveland, Ohio, by way of Columbus and Toledo to Detroit. Total distance, 350 miles. Participating will be steam, gas and electric cars up through vintage 1918. Cars will not necessarily drive from city to city. If hauled must be unloaded at every scheduled night stop and operated under their own power. If you like old cars and live in this area, plan to be roadside. You'll see as many as 275 old cars.

**FANTASTICALLY** interesting piece of machinery visited us last week. It's a two-liter (122 cubic inches) Ferrari with a vivid red and black Vignale Corsa body. Owner Randy McDougall specified in his original order that car was to have no overhang. This evidently pleased Ferrari since they added a piece of silver scroll saying "McDougall" on side of body. Specs of car include 88 in. wheelbase, V-12, single overhead cam on each bank, three carbs, 168 hp at 7200 rpm, five-speed gearbox (fifth being overdrive), 5.90 x 15 Borrani wheels and top speed between 135 and 145 mph. We'll be watching McDougall in his Ferrari in local races, and will report further. Oh, yes, price. A mere \$8500.

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## This Month's Cover

is Jack Campbell's way of showing how MT Research gathered seven economy cars together for on-the-spot comparisons. The full report, beginning on page 52, includes driving impressions, economy figures, and descriptions of each car's qualities. The Western design in the upper corner? That's one of the more conservative patterns found in Felix Zelenka's story about "Those Shocking Seat Covers," on page 28.

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# MOTOR TREND

THE CAR OWNERS MAGAZINE  
Combined with Auto Sportsman



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# Stop Radiator Rust FOREVER!

**With PROTECTO ROD, the Miniature Permanent "Battery" that Purifies Radiator Water—Stretches Engine Life!**

Rust and scale accumulating in your radiator and engine water jackets during cold weather can quickly ruin your car. First, these corrosive deposits cut the efficiency of the cooling system, causing overheating, power loss, and gas waste. Then, because winter temperatures often prevent lubricating oil from circulating freely, excessive cylinder and bearing wear follows, making expensive repairs necessary thousands of miles sooner than if the cooling system were working properly.

## Danger Ahead!

Most drivers don't realize how much damage summer rust and corrosion have already caused until a cold snap causes weakened engine block or radiator to suddenly collapse—then it's too late to avoid a \$200-\$400 repair job. Right now is the time to prevent costly engine damage—before it takes place!

## Here's How to Prevent Damage

This simple 2-way treatment permanently prevents radiator trouble—will restore efficiency even on older cars where rust and scale have already impaired the radiator. First part of the kit is the ingenious McRay Protecto Rod. This consists of a series of small zinc and copper plates which function just like a tiny "battery," setting up a mild galvanic action which neutralizes the destructive action of oxygen, ammonia and minerals present in the water, and makes it impossible for rust or scale to adhere to radiator or motor block. Protecto Rod is not affected by heat, cold, or anti-freeze solutions. It is fitted with a corrosion-proof neoprene hanger and is flexible to allow 5-second installation in any car or truck radiator. Inserted through the radiator filler opening, Protecto Rod goes to work immediately and remains on guard permanently. Included in each kit is a generous package of Leak Seal—a cold solder which not only seals radiator leaks from the inside, but also is an effective water pump lubricant.

## Motor Trend Research Says:



"Criminy—it works! Water in the Chevy radiator was dirty with rust, scum & scale when I installed the rod three months ago . . . I haven't flushed the radiator or touched it in any way, but the water has cleared up completely."

## Write Today for No-Risk Trial

For complete Radiator Kit, including both the Protecto Rod and "Leak-Seal," send only \$2.98; we pay postage (heavy duty kit for tractors, trucks, buses \$4.95). Or order C.O.D. (you pay postal charges). If you are not entirely satisfied, return only the Protecto Rod for full refund and keep the "Leak-Seal" for your trouble.

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Please send me complete Radiator Kit for 15-day free trial. If not entirely satisfied, I may return Protecto Rod for full refund and keep "Leak-Seal" for my trouble.

I enclose: ( ) \$2.98 for regular size  
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Send C.O.D. ( ) reg. size ( ) truck size ( )

Name.....

Address.....

City.....Zone.....State.....

## The Glove Compartment (Continued from page 4)



ALFA ROMEOS seem to be in good standing with Hollywood stars. Here Frank Sinatra stands by his new 1900 Alfa cabriolet, styled by Pinin Farina, which he bought in Turin, Italy and shipped to Los Angeles. Tyrone Power also recently purchased a 1900 Alfa cabriolet; which makes his second Alfa, first one being a 2500 Farina cabriolet.

IF YOU'VE been wondering how often to change your oil, here are latest recommendations from American Petroleum Institute. For city and suburban driving, every 1000 miles; dusty and cold weather driving, every 500 miles; open highway driving, every 2000 miles.

SOON TURN SIGNALS will be seen on all new cars, and probably more than just an optional item. National Automobile Dealers Association says following states require turn signals on new production cars: North Dakota, Minnesota, North Carolina, New Hampshire, and New York. In next two years seven other states (Iowa, Nebraska, New Mexico, South Dakota, Washington, Idaho, Vermont) will have turn signal legislation.

IN RECENT ceremonies in Detroit, Classic Car Club of America awarded gold cup to Packard for styling of 1953 Packards and Clippers. Preceding this was a caravan of 50 cars with assembly points at Harrisburg, Penna., and Toledo, Ohio before touring to Detroit. Half of cars were Packards, while others included 1928 Bentley touring, 1930 Franklin sedan, 1932 Auburn phaeton, 1930 Stutz V-16 Derham convertible coupe, 1929 Rolls Royce town car, 1938 Mercedes Benz cabriolet.

COLORADO REGION OF SCCA announces its first Annual Continental Divide Rally for Oct. 2-4. Patterned after Monte Carlo, rally is set up so entries can start anywhere in U.S., Mexico or Canada, traveling at pre-assigned speeds to wind up at Durango, Colo. by 6 P.M., Oct. 2. Oct. 3 is for Concours d'Elegance and reliability competition to break ties. Oct. 4 is for side trip to Mesa Verde National Park, one of the Southwest's little-known vacation spots.



NEWLY APPOINTED Western States Manager for Rootes Motors, Inc., George Thornally, heads up a new Los Angeles organization with a well-equipped parts department to serve dealers and distributors west of Mississippi and in Baja California, Alaska, Hawaii and Guam. Thornally is seen with Henry Henkel, General Manager (U.S.) for Rootes Motors, Inc., and Marjorie Dean at the company's recent opening.

(Continued on page 8)

Truly, a superb double-feature sports car

## SINGER

SM 1500C

Singer... for 4 passengers or 2...  
for those discriminating few who desire  
stylish sports car driving yet  
big car roominess.

Economy plus styling — a winning Singer  
combination bolstered by the  
outstanding features such as the 1497 c.c.  
overhead camshaft engine and  
rich leather upholstery. These and many  
other luxury features make Singer  
a style leader for the boulevard while its  
many impressive wins on the track  
prove its merits mechanically.

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Cooper Motors, Inc.  
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Allied Sports Cars  
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**Sensitized**  
**GASOLINES... for instant response!**

Achievements in gasoline chemistry in step with the newest developments in automotive engineering—brought to you by people who pioneered in the selective processing and blending of automotive fuels.

Eight

## The Glove Compartment

(Continued from page 6)

TEX STEVENSON, Merchandising Manager, Hudson Motor Car Company, Los Angeles office, called up after our Hudson Jet test (August '53 MT) to say that car we tested did not have as good brakes as most Hudson Jets. "When cars are turned over to us they're supposedly in good shape," was our reply. "But we're willing to test another car and publish results if they're better than originally." Second car had considerable improvement at lower speeds: 30 mph, 42 ft.; 45 mph, 93 ft. Previous car's figures ran: 30 mph, 45 ft.; 45 mph, 104 ft. At 60, both took 213 ft.

Ford Motor Company's X-100 will be sent abroad for public showings in France and England. The completely American-designed, American-built futuristic automobile will be presented at the Champs-Élysées Salon of Ford of France (in Paris) for four days in late September. Its next showing will be at the Paris auto show (Oct. 1-11), then it goes to London, to be shown at the auto show in Earl's Court (Oct. 21-31).

The 5900-pound laboratory-on-wheels is a five-passenger, two-door convertible built on a 123-inch wheelbase. It stands 56.9 inches high, is 81.2 inches at its widest point, and measures 220.9 inches, bumper to bumper. First exhibited as the "195X," the car is said to contain more than 50 innovations, and is now a fully operating test car, with all its original design features installed.

An outstanding feature is the sliding roof panel of transparent, non-glare, heat-proof plastic. A "rain-cell" activates the roof when the car is unattended in rainy weather.

For the ultimate in driving comfort, the X-100 incorporates electric seat warmers to counteract the wintertime "cold feel" of the black-and-white leather upholstery. The front seat is adjustable six ways—up-down, forward-backward, and tilt forward, tilt back. Ford engineers have outdone themselves in providing power-operated features, for along with the usual power steering and power brakes, they have incorporated an *electric power-assisted hand brake!*

Other accessories include a dictaphone, radio-telephone, electric shaver, signal-seeking radio, and two horns—one for city driving, and a louder one for highway traveling.

A 12-volt electrical system provides power for 24 electric motors, 44 electronic tubes, 50 light bulbs, 92 control switches, 29 solenoids, 53 relays, and 23 circuit-breakers. The 300-horsepower, overhead-valve engine utilizes a multi-barreled carburetor said to be equal to 12 single-throat carbs. The black steel-and-aluminum body has a minimum of "lazy weight" because of the use of over 300 pieces of aluminum.

The Editors

Motor Trend

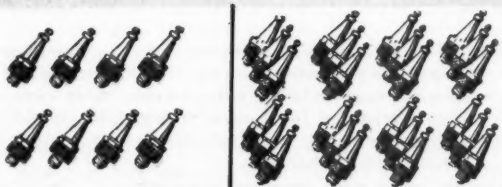


*Just Simple Arithmetic*

$$3 \times 1 = 3$$



## TRIPLE-FIRE AIRPLANE-TYPE SPARK PLUGS OUTLAST ORDINARY PLUGS **3 TO 1!**



On the left is a set of ordinary spark plugs. On the right, you see a set of Triple-Fires for the same car, showing for comparison, the triple service you get from each plug. Triple-Fires are priced with other first line plugs,—yet they out-perform and out-last other plugs 3 to 1, actually saving you up to \$13.20 per set. And here's why—



Triple-Fire has three genuine nickel-alloy "grounds" instead of a single steel one. Each spark heats its ground point, momentarily raises its resistance, and causes the next spark to seek a different gap. The three points thus fire in perfect rotation. Triple-Fires hold adjustment three times as long,—are three times as reliable as other plugs.



All Triple-Fire Plugs feature the famous Lifetime Cardo insulators. This material, first developed to meet the vital high-speed requirements of fighter aircraft in World War II, resists heat, tetra-lead shorting & etching, and absolutely eliminates the high-temperature fractures which cause frequent failure of old-type ceramic insulated plugs.



Triple-Fires climax 15 years of intensive research, and production experience. Gruelling 50,000 mile tests on road & track, and continuous laboratory "breakdown" tests prove Triple-Fires 3 to 1 superiority over other first line plugs. That's why the makers of Triple-Fires back their claims with a guarantee no other manufacturer dares match!

### UNCONDITIONALLY GUARANTEED FOR 20,000 MILES!

(covers defective material as well as workmanship)

**ORDER BY MAIL TODAY!** Triple-Fires are furnished in perfectly matched sets for 89¢ each (single plugs 98¢ each) Shipped postpaid or send \$1.00 per set deposit; balance C.O.D.

**DEALERS ATTENTION:** Choice territories available; write on your letterhead today for complete information.

## ENGINE PRODUCTS MFG. CO.

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**ENGINE PRODUCTS MFG. CO. Dept. 92  
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Gentlemen:

Please ship \_\_\_\_\_ sets of Triple-Fire Spark Plugs for:

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# Spotlight On Detroit

FYI...NEW MODEL

**D**ETROIT, MICHIGAN—Flames which gutted the GM Hydra-Matic transmission plant froze production of Cadillac, Oldsmobile, and Pontiac cars. Severity of the blow is explained by the fact that Hydra-Matics were used on 100 per cent of Cadillac production, 98.5 per cent of Oldsmobiles, and 85 per cent of Pontiac output.

**ALSO HIT HARD BY THE DESTRUCTION** of the sole source of Hydra-Matics was Lincoln, which scheduled a shut-down because of the fire. Nash, Hudson and Kaiser were lagging in production when the fire struck. With time on their hands which could be used for change-over to 1954 models, the possibility is strong that introduction dates of the cars affected may be moved ahead, if they are not too immediate. However . . .

**AS WE GO TO PRESS**, it is learned that effective September 8th Dynaflo transmissions will be used on 1953 model Cadillacs and Oldsmobiles. This is a quick method of keeping production up on these cars; this move will give Cadillac and Oldsmobile approximately 75 per cent of their former production using Hydra-Matic. Pontiac will be using Powerglide, effective on the same date. Lack of Hydra-Matics will naturally hold up the announcement of the new Hudsons, originally scheduled for hitting the market early in September.

**IN ORDER TO HURRY UP** the resumption of Hydra-Matic production, GM has leased the aircraft part of Willow Run. As this is written, equipment is being moved in and it is estimated that Hydra-Matic production will again be under way within six to eight weeks.

**HUDSON'S NEW "ITALIA,"** styled by Touring, is an aluminum bodied coupe on the Super Jet chassis. Weighing under 2000 pounds, it has been clocked at over 100 mph (not its top speed). What's more, it can use the Hornet engine; you can make your own speed estimates for that combination! Above all, the car emphasizes safety. Over the headlights are big air vents that cool the brakes and tires, and the rear wheels have vents too. The car has individual bucket seats with safety belts and two-piece backs, an inside luggage compartment with straps to hold the contents in place, and a one-piece windshield with cornerposts that actually slant back, as predicted in August MT. Just as we went to press, we also saw the new standard Hudsons. With squarish hoods and decks, new rear fenders that lean out, and power brakes and steering, they have more horsepower. Hudson says that this is not to join in the "race," but to give a flatter torque curve. The Hornet, with 160 bhp (170 with Twin H), hits peak torque at 30 and accelerates straight up to 80 without dropping off!

**NASH CARS WILL FEATURE** a European-type concave grille on the Ambassador and Statesman lines with other minor trim changes and some engine modification for increased performance. The Continental spare tire mount made standard on the Rambler models this year reportedly will become standard on all Nash cars with the exception of the Rambler station wagon. To give this model something different, the Rambler station wagon will feature a notched roof from about the mid-point back surrounded by a chrome railing for luggage. The imported NKI is expected to be announced with the other cars in the Nash line.

**FORD CHANGES**, in addition to the new ohv V-8 reported last month, will include a sweep-spear à la Buick

from the front fender curving downward to the rear fender with minor grille changes returning the parking lights to the grille bar, etc. Tail lights incorporate three spokes radiating out from the pineapple center and are otherwise unchanged.

**BUICK WILL DROP** the in-line eight entirely in 1954 models, go to ohv V-8 in its full line of cars together with a reported hp increase close to 200 hp on larger models.

**LINCOLN, ACCORDING** to speculation in the Motor City, is the odds-on favorite to win the 1954 horsepower race. One enthusiastic rumor has it that the car will go to 275 hp next year. While the possibility of that kind of jump is remote, the money boys are figuring it will take 250 hp to cop the hp trophy, for . . .

**HORSEPOWER WILL** definitely be news again in the 1954 models. Chrysler is already figuring out how it can switch its stand gracefully from an anti-to-pro-horsepower line in anticipation of its contemplated jump to 220. Cadillac, though it will place major emphasis on styling in 1954, is known to be extremely sensitive about being left behind. Hudson Hornet output will be 175. Some makes will up output 10 to 15 horsepower through increases in compression ratios and better breathing, relatively inexpensive changes. This policy of . . .

**HOLDING BACK** horsepower is one way the automakers can keep their prices competitive. One expert figures that most new engines hold a potential twice their horsepower when introduced for normal driving, with the ultimate under a full-race setup something even higher. As a general rule of thumb . . .

**FIGURE ON A NEW ENGINE DESIGN** to run for at least five years without major modification, often much longer than that. Frequently, the auto companies will not break even moneywise on their production equipment until it has been out a major portion of that time, so "improvements" must be planned into an engine design before it is ever introduced, then gradually given to the public.



*Touring designed this appropriately named "Italia" sports car for Hudson. Note the concave fenders as on Abarth (page 48)*

## BODIES ARE ANOTHER EXAMPLE of the same problem.

A body style leaves the company in the red for better than a year in most cases, so a basic body shell is usually figured for a life of about three years. A good body design for one of the Big Three, for that reason, is not only one which can be restyled each year by trim, fender, and hood changes, but also frequently can be used on several cars that the company produces and changed every year on each one of them! Reported examples are Cadillac, Buick, and Oldsmobile which share one body; Pontiac and Chevrolet; Chrysler and DeSoto; Plymouth and Dodge; and the Ford products.

**BOILED DOWN IT MEANS** that however disappointed you may be with trim changes and horsepower handouts, this method of new model changing permits the auto companies to keep the prices of their products down to competitive levels which otherwise would be impossible. The basic pattern of a body change every three years and an engine change every five years minimum seems pretty well established until new manufacturing developments come along. Meanwhile you can look at cars like the . . .

**LE MANS, CADILLAC SPORTS** prototype, which was recently made available to Detroit newsmen at the GM Proving Ground for driving. Three of the Fiberglass-bodied cars have thus far been built at a cost of \$1 million and each is somewhat different. This model featured a 9 to 1 compression ratio and twin Cadillac carburetors with no other modification to the engine; reported horsepower: 250 at 4500 rpm.

**FLOORBOARDING THE ENGINE** with the reworked Hydramatic unit immediately sends the tach over past 4000 and the car gets 0-60 in slightly under 9 seconds, drops into fourth at about 87 mph. This performance is the more surprising since the car weighs only 400 pounds less than a standard Cadillac convertible. Though the steering ratio is standard, the shortened wheelbase of 115 inches makes the steering moderately sensitive and the low center of gravity contributes to good road-holding.



*A magnified, critical eye looks over selected samples of platinum used on the tips of Ford voltage regulator contact points.*

**DEFINITELY TOO HEAVY** and spongy for competition should the question even arise, the car's performance and acceleration give Cadillac engineers something to shoot for and prove refreshingly that the car is not merely for "show." Though the car will not be built as such, the version of the "El Dorado" next year will look much like the Le Mans but with a rear seat.

**SPORTS CAR ENTHUSIASTS** will be interested to learn that the Vega sports car featured on the cover of last month's issue of **MOTOR TREND** should go into limited production early next year. Already formed is Vega Corp. (Vincent E. Gardner Automobiles) and when the car has been thoroughly tested and the design has been finalized production will begin to roll.

**A HEADLIGHT DIMMING DEVICE** to compete with the GM Autronic Eye is reportedly nearing production by Hall Lamp. Features of the device are thus far unknown but reports indicate the unit will be available as an accessory with an attractive price tag.

**MALLORY IGNITION** is understood to be experimenting with aluminum spark plug bases. Better heat dissipation, lessening any tendency to pre-ignite or to burning of the electrodes, is claimed.

**AN IMPROVED GAS TURBINE** engine soon is reported coming from Rover Co., Ltd., manufacturer of Rover and Land Rover automobiles. The engine is expected to be a production version incorporating lessons learned from the 200 hp turbojet used in the Rover Turbocar.

**VOLKSWAGEN SEDANS** will be built in Brazil if plans to erect a \$32 million production plant near Sao Paulo materialize. By 1955 the firm hopes to be turning out 12,000 cars a year in Brazil and hopes to compete with Ford, which opened a \$10 million assembly plant there last April.

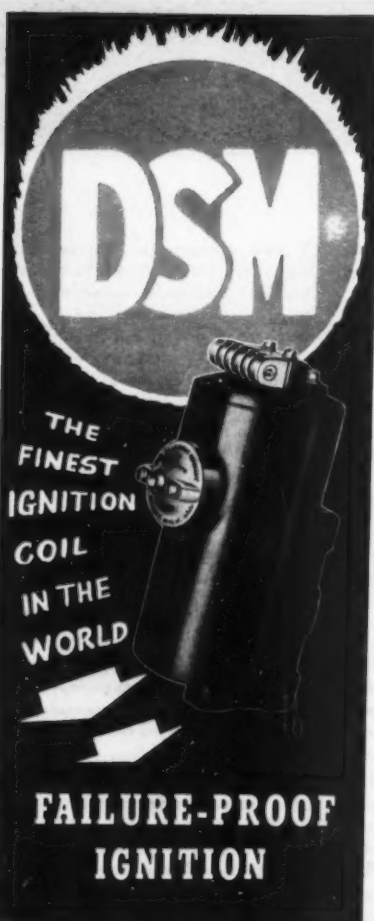
**A NEW RUSE** to separate the car buyer from his money is reported in Detroit. If you find a tag offering you a brand-new car "for your car and payments of only \$15.00 for two years," etc., be wary. The trick is that the amount is payable every two weeks, not every month as you might expect. It's in fine print at the bottom.

**A RECENT REPORT** from the Inter-Industry Highway Safety Committee reveals that one out of every six vehicles is being operated with dangerous brakes. In addition, front lights needed attention in one out of 11 cars checked, rear lights in one out of 13, steering in one out of 13 and the exhaust system in one out of 14.

**OLDSMOBILE'S FIESTA** sports convertible recently went into limited production. Selling at \$5175, the car features a wrap-around windshield and notched doors together with a full line of deluxe accessories as standard equipment. A new touch not seen on previous prototypes of the car is a unique two-tone paint job which follows the molding above the rear fender and over the rear deck giving the car an unusual appearance.

**ADVERTISING IS A BIG REASON** why your car costs as much as it does. The cost of advertising per car as figured by some of the major manufacturers includes: Lincoln more than \$100 per car, Packard \$54, Cadillac \$41, Ford \$9, Plymouth \$7, and Chevrolet \$6. Every ad you see in a newspaper or hear over a radio is adding indirectly to the cost of your car.





**DSM**

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**FAILURE-PROOF  
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**yes,**

DSM Coils are used by many of the country's leading race drivers . . .

**BUT—**

The great majority of DSM Coils are purchased by the motoring public who have never been in nor ever intend to be in a race. This vast majority want **PERFORMANCE, ECONOMY, BETTER IDLE, BETTER ACCELERATION** as well as Top Speed and immediate reaction from their car when in a traffic pocket.

Replace your ignition coil with a DSM Coil TODAY and join this smart motoring set who are wise to the benefits and economies of TOP IGNITION and PERFORMANCE.

DSM Coils are UNIVERSAL and can be transferred from car to car, as you purchase new automobiles, giving you a lifetime of faithful service and economical performance. The economies provided by DSM COILS will return time and time again their cost to you.

*Free Literature Upon Request.*

**DSM ELECTRIC  
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*Jobber Inquiries invited*

# Letters

## CLASSIC COMMENT

Gentlemen:

I am a regular reader of MOTOR TREND and would like your opinion on my 1929 touring Packard Eight. It has a Rollston body, with bucket seats in front, and a space between the seats to keep golf clubs. It has a



rear windshield which draws out in place of one bucket seat in the rear. The car is about in perfect condition. It is now stored.

John Faedi  
Sayre, Pa.

Gentlemen:

Enclosed you will find a dollar, and the card for the six-months' subscription to MOTOR TREND. I'm an old reader, but feel I would like to make it regular.

Incidentally, I am enclosing photos of my Cadillac 1932 Model 452B, V-16 . . . You



mentioned publication of photos of classics in your column, and it set me to wondering if this is a true classic or just another . . . ?

Richard E. Panzer  
Richmond, Va.

*Here are two fine classic cars. Their appeal is widespread, for they represent entirely different trends. Our opinion on the Packard is this: it should be driven, not "stored," because this is a car that just seems to want to give its owner the time of his life. The Cadillac, on the other hand, has an air of solid refinement. Its dignified lines were the beginning of a GM trend.—Editor.*

## SMALL-CAR DILEMMA

Gentlemen:

. . . I am presently considering the purchase of one of three English-made cars, namely the Consul, Austin, and Hillman. I am somewhat at a loss as to which of the three would best answer my purpose.

Fred Samuel  
Rego Park, New York

*See page 52.—Editor.*

# A MUFFLER for EVERY CAR

LARGEST SELECTION  
AVAILABLE

*Douglass*  
STEEL MUFFLED  
**DOUGLASS  
SINGLE MUFFLERS  
ARE MANUFACTURED FOR  
NEARLY EVERY MAKE AND MODEL CAR**

Douglass Mufflers cut back pressure up to 50% . . . Giving car added Power & Acceleration. Saves Your Engine! Steel Packed, Straight thru type. 16 Ga. Steel Tube Construction. Outlasts 3 to 5 ordinary Mufflers. Engineered to fit your car. Easily Installed. Gives your car the popular DEEP mellow Dual Tone (No Harsh sound).

Douglass Dual Muffler Sets for increased motor efficiency . . . Driving Pleasure. Available for: Ford & Merc., All . . . Dodge-Plymouth, (Except Convertible) . . . Stude V8 . . . Olds 88 & 98, All . . . Small Lincoln Standard or Hydramatic . . . Chevy (except Convertible) . . . Cadillac V8 (Hydramatic Only) . . . All Dual Sets complete With Every thing needed to install including instructions.



DOUGLASS "POWER FLOW" System, the finest most up to date Balanced Exhaust System developed by the Douglass Co. gives your car **NEW ADDED POWER . . . ECONOMY . . . EFFICIENCY . . . FASTER Pickup . . . MORE SPEED.** Complete set includes: Headers, Extensions, 2 Steel Packed, left Tail Pipe, oil Brackets, Clamps & Gaskets. Complete instructions for easy installation included with every purchase. Douglass "Power Flow" Balanced Exhaust Systems are now available for '35-'53 Ford, '39-'53 Merc., '49-'53 Olds 88 & 98, '51-'52 Stude V8, '49-'51 Small Lincoln (Std. or Hydramatic), '50-'51 Cadillac (Hydramatic only).



All your fully guaranteed Douglass Exhaust Equipment may be seen and purchased at any Speed Shop or Auto Parts Dealer. If your Dealer is temporarily sold out write direct for complete information.

**Douglass Muffler Mfg. Co.**

1916 W. Valley Blvd., Dept. M-10 Alhambra, Calif.



# Don't Send a Cent for Anything on This Page!

**Ridiculous? Not at all! Read this and learn how the "little club we started by accident" has become the Biggest Car Owner's Cooperative of its kind in the world!**

by "GILKY" GILKERSON

**A**FTER the series that appeared in *Motor Trend*, most of you know how we've grown from a handful of car "fanatics" to about a half million members all over the world—including about 50,000 readers of this magazine.

A few years ago, we started what we term a car owner's cooperative. We figured that if co-ops were a good thing for farmers, grocers, etc., car owners could benefit in the same way from an organization that could get discounts for them and act as a sort of clearing house for automotive info.

Well, the word got around pretty fast. In fact, the Club is so big now we can't have regular meetings, so we keep in touch by mail through the Club newspaper.

## BENEFITS OF NATIONAL CREDIT CARD

Besides the regular Membership Card entitling members to discounts and other courtesies, members can apply for the National Credit Card issued to qualified members. Looks like your regular oil company credit card, but it's good all over the country for all kinds of things besides gas and oil: hotel rooms, meals, airline tickets—even loans to finance weddings, vacations, or practically anything else up to \$1175.

## FREE TRIAL PRIVILEGES

Some time ago, a manufacturer of automotive parts asked us if Club members would like to try a new product of his on their cars.

"Gilky," he says, "I don't even want a deposit from your members. I'll send this new equipment to any of your members on a free trial. Tell them to try it and if they don't like it send it back." This worked out so well (turned out the members were honest, or I wouldn't be telling this story) that other manufacturers asked our members to try their products the same way: some of them are shown on this page.

## THAT GOES FOR ANYTHING ON THIS PAGE IF YOU'RE ALREADY A MEMBER

Just write your card number in the coupon and check off the things you'd like to have sent you. That's all: don't enclose any money, don't pay the postman anything. Try first, then decide if you want to keep what you've sent for. If so, it needn't cost you a cent if you use the Club plan.

## LOOK WHAT THIS CRAZY FRENCH INVENTOR SAYS HE CAN DO!

We knew we'd seen everything the day this crazy French inventor, J. A. E. La-Chapelle, walked in with his idea, quote: "Ze engine bearing, he is in zee wrong place!" He figured bearings should be between the pistons and cylinder walls where most of the wear takes place. He claims his special patented alloy pellets, which are dropped in the gas tank, sort of dissolve slowly and are carried in the gasoline to the cylinder walls to make a bearing-like surface that lasts 100,000 miles.

Sounded impossible, but after taking a compression reading, before and after, on our old clunk, we decided: *sacre bleu!* the Frenchman might have something, yes? It really worked!

"We'll pass this along to Club members and let them test it," we told him. "If it doesn't do all you say, they pay no money! Fair enough?" He agreed. So, if you want the 100,000 mile treatment, check the box in the coupon.

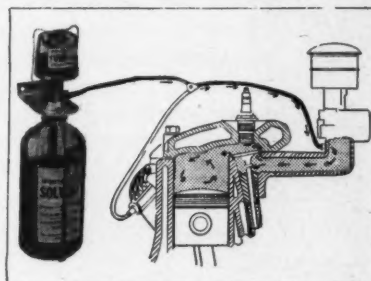
## SPECIAL OFFER TO NEW MEMBERS

If you're not already a member, you can join by filling out the application below and enclosing \$1 to cover the cost of the Club newspaper and other expenses. Also, check anything in the coupon you'd like to try free. Just to make it interesting, we've put together a big free package for new members. You get \$2 worth of gas coupons, credit memoranda, lots of other stuff.

## EVERYTHING ON APPROVAL

When you get your new member package, look it over and decide whether or not you want to stay in the Club. If not, just bounce the package back at us (frankly, some people have done just that) and we'll return your buck right away with no questions asked, no hard feelings. You don't risk anything, and we're betting you'll enjoy being a member as much as we'll like having you in the Club!

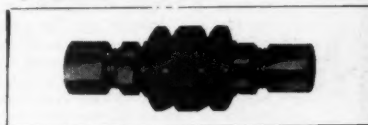
**Gane Economy Club, Dept. CM-10  
605 West Las Tunas  
San Gabriel, California**



## TRY THE "POOR MAN'S MECHANIC" FREE

This Automatic Tune-Up Injector is an attachment that automatically flushes out your car engine every 100 miles before carbon becomes a problem. Tucked under the hood, tune-up fluid keeps building up in the Injector's small reservoir on top. When full, it flushes out your engine (you don't even know it's going on) and starts filling up again for the next time.

If you'd like to try it free (the manufacturer throws in a \$1.00 pint of tune-up fluid free: you keep that no matter what), just check the coupon.



## CAN THIS THING STOP PING?

If your engine pings, here's a gadget that might stop the trouble. Mind you, I said *might*: while a lot of members have said this is the greatest thing they ever got, some don't think it's so hot—in fact they think it doesn't help a bit. Now, the idea is good: this is a small control valve that you stick in your connecting line to synchronize the spark advance with your engine's RPM. Ought to work, and usually does, but sometimes it doesn't. So if you decide to try it and then you bounce it back with a few cuss words, don't say I didn't warn you. Anyway, it won't cost you anything to try it on your car, and it's an interesting gadget to see, anyway. Check the coupon if you want it.

## The Great National GANE ECONOMY CLUB

Dept. CM-10, 605 W. Las Tunas, San Gabriel, Calif.

Dear Gilky: Please send for free trial: ☐ Ping Stop ☐ Tune-Up Injector ☐ 100,000 Mile Treatment

☐ I am a member, Card No. ....

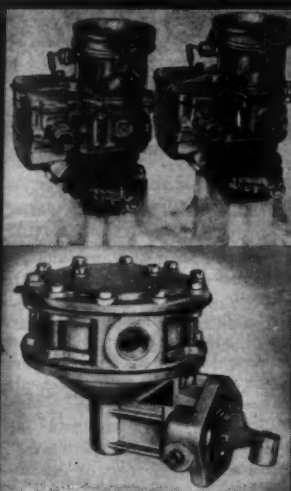
Name .....

☐ Here's a buck. Send me the new member package. If it looks OK, I'll keep it. If not, I'll send it back within 10 days and you'll return my buck.

City..... Zone.....

State .....

30 years of pioneering with Custom Accessories has taught HC engineers that auto sport enthusiasts appreciate the best in quality and design at modest prices. Thus, careful attention is given each part produced, assuring you exceptional quality and the very finest in design.



## you can have quality at a sensible price!

You see illustrated here just a few of the many HC quality products.

1. CHROME PLATED CARBURETORS for Ford V-8, Mercury and Chevrolet, all models. Skillfully re-manufactured to factory specifications. 2. CHROME PLATED FUEL PUMPS for Ford V-8, Mercury and Chevrolet, all models. Pumps feature all purpose neoprene diaphragms. Illustrated is the famous HC666 six valve pump especially suited for heavier engines. 3. CHROME PLATED WATER PUMPS for Ford V-8 and Mercury. Expert finishing gives these units an exceptional appearance. Reassembled with all new parts and thoroughly tested. 4. CHROME PLATED BONNETT AIR CLEANERS for nearly all cars. Knitted mesh pack guaranteed power-saving air cleansing with minimum restriction. 5. CHROME PLATED AIR CLEANER designed specifically for the new quadra-jet and extra large carburetors used by '52-'53 Cadillacs, Oldsmobiles, Buicks, Lincolns, Mercurys, etc. Knitted mesh pack may be coated with heavy oil for more certain filtering. 6. CHROME PLATED LOUVRES for improving your car's appearance. Concealed fasteners assure a smooth installation. May be functionalized simply and inexpensively.

See your nearest dealer or write for your free illustrated catalogue.

Dealer Inquiries Invited.

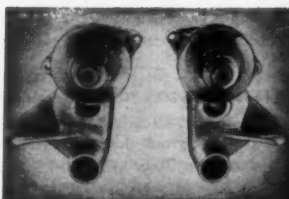


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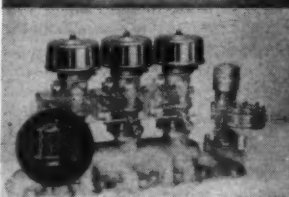
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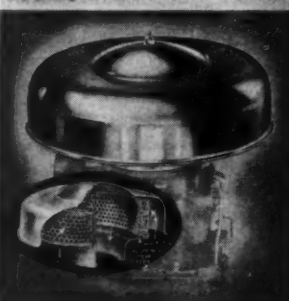
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## Letters

(Continued from page 12)

### THE SPORTING SPIRIT

Gentlemen:

Congratulations on a very humorous and typical article ("So You Want a Sports Car?"—September MT). I happen to be the proud owner of a 1952 MG . . . Your article recalled the many incidents which I have had with my TD. Surprising as it may seem, however, on my way back to Spokane from California, I was passed by only two cars, and set the pace for many more.

My MG has also been the source of many headaches, such as learning how to operate the very intricate jack . . . I have yet to find the proper adjustment for my carburetors, and I also just recently found out that there is not an exceptionally great amount of clearance between the oil pan and rocks embedded in rough roads.

But of course, there's always the thrill of being able to corner without removing your foot from the gas pedal, and being able to bob in and out of heavy traffic. I have yet to have a hard time finding a place to park my little "full-race Maytag." Thank you for a very enjoyable bit of satire.

Ross A. Smith  
Spokane, Wash.

### CAR FIENDS AND HAPPY HOMES

Gentlemen:

Just read and enjoyed "I Married a Car Fiend." I know what it's like too—for my husband's love and hobby is cars, and some of it is rubbing off on me.

Is it true that a law has been passed banning dual pipes in Michigan? If so, what about the cars that come so equipped, as I understand the Cadillac is?

Mrs. Norman Foster  
Flint, Mich.

This may be the tail-end of an oft-repeated rumor that certain Eastern states are considering a crack-down on speed equipment. In that case, straight-through-type pipes would probably feel the axe, rather than dual muffler systems as a whole. Prohibition of dual mufflers would seem to prove only ill temper on the part of the authorities. —Editor.

(Continued on page 16)

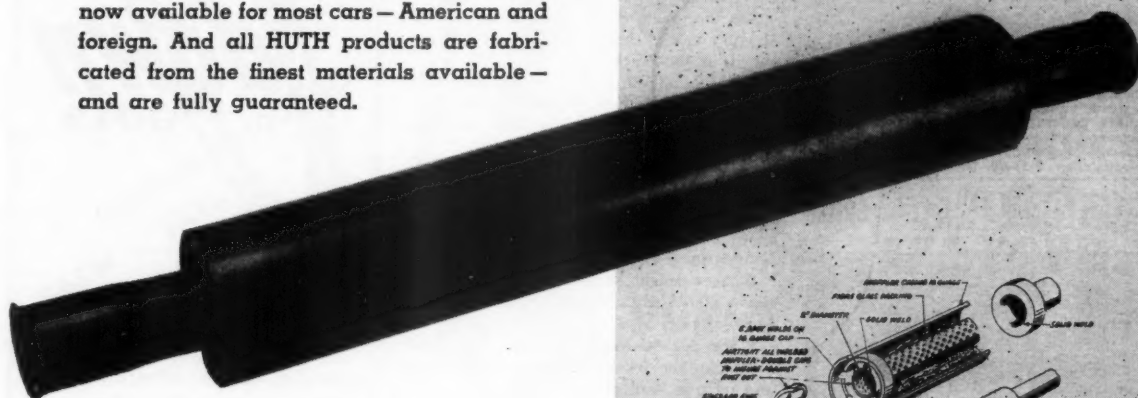




# Huth GLASPAC MUFFLERS

DESIGNED AND ENGINEERED TO LAST THE LIFE OF YOUR CAR...

Sensationally new in design, HUTH Glaspac balanced duals, singles and header sets are now available for most cars — American and foreign. And all HUTH products are fabricated from the finest materials available — and are fully guaranteed.



All HUTH Glaspac dual kits are complete, ready for easy installation. Kit contains two HUTH Glaspac mufflers, header pipe, tail pipe, brackets and detailed instructions. Prompt and courteous attention given your request for additional information before ordering.

Local installation made on your car by our skilled mechanics insure new increased performance and power. For appointment phone **CHarleston 0-2168**.

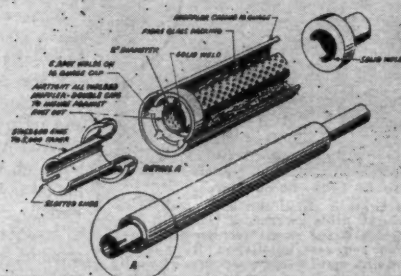
**GERRY HUTH** says: "We have had many requests for a durable muffler with a deep, smooth tone. After months of research, testing and fabrication, we offer to you the toughest and smoothest of them all, HUTH GLASPAC."



#### HUTH GLASPAC DUAL AND HEADER SETS

<b>FORD</b>	35-48	\$27.50 — with headers	\$54.50
	49-53	35.00 (includes cast iron manifold)	
<b>MERCURY</b>	39-51	\$27.50 — with headers	\$54.50
	52-53	35.00 (includes cast iron manifold)	
<b>OLDSMOBILE</b>	49-53	\$39.00 — with headers	\$78.50
<b>STUDEBAKER</b>	51-53	\$39.00 — with headers	\$75.50
		(plus many others not listed)	

• Muffler specifications according to horsepower •  
 Small cars — 1½" inside diameter of muffler.....\$9.95  
 Big cars — 2" inside diameter of muffler.....\$9.95  
 All HUTH custom Glaspac Mufflers are engineered and balanced for top performance and better tone.



HUTH Glaspacs are designed for both American and foreign cars.



Quick, efficient installation may be made at our new, modern shop by experienced men who make each job a personal one. We specialize in custom dual and header sets for all cars.

Send now for your **FREE** personalized parts catalog  
 (Over 10,000 muffler parts available!)

Dealer inquiries cordially invited.

**HUTH MUFFLER CO., 1701 W. Magnolia, Burbank 8, Calif.**

Please send at once:

- ☐ One HUTH Glaspac Muffler    ☐ One HUTH Glaspac Dual Set  
☐ One HUTH Glaspac Header set    ☐ Check or money order in full payment is enclosed.

Specify year, make and model of car and type of transmission \_\_\_\_\_

(All prices F.O.B. Burbank, Calif.)

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

MT-10

## CUSTOM-STYLED

TOMORROW'S GRILLES TODAY



**Custom Center Bar**  
For Your 1953 FORD

No Cutting or Drilling Necessary  
Installed in a Few Minutes. 16 Inches Long  
This beautiful bar replaces the center bowl and also extends outward to cover the black striping. It matches perfectly with the original right and left bars and gives your grille the appearance of one massive single bar. Excellent chrome plate. Easy installation. F-53-CB—Guaranteed \$7.50 Each.

## CUSTOM-LINER GRILLE



To Fit 1949-50-51 Fords

This Custom Grille is styled and engineered to replace the original grille on all Ford 1949-50-51. Constructed of heavy gauge steel. Precision engineered for perfect fit and easy installation. Its gleaming chrome finish and massive appearance will beautify any Ford. Individually boxed—can be shipped parcel post. FCL-49—Guaranteed \$21.00 Each.

## GRILLE BARS



**FORD 1949-50-51**  
F-249—Guaranteed \$17.50 Each.

**FORD 1952**  
F-52-CB—Guaranteed \$19.75 Each.

**MERCURY 1949-50**  
M-249—Guaranteed \$19.75 Each.

M-46-CG



1946-7-8  
\$4.95 Ea.

## MERCURY CUSTOM CENTER GRILLES

M-49-CG



1949-50  
\$5.95 Ea.

Replaces the original center piece on your Mercury.

We can supply replacement Ford 1951 Parking Light Frames and Hood Mouldings. These Parking Light Frames and Hood Mouldings are necessary when customizing a 1949 Ford. Only the Hood Moulding is necessary for a 1950 Ford. Parking Light Frames—\$10.00 per Set. Hood Mouldings—\$9.00 per Set. Guaranteed.

Other custom grilles not shown here are produced in our own factory. ORDER DIRECT if your Dealer cannot supply. DEALER INQUIRIES INVITED. All orders must be accompanied by at least 20% deposit. Balance C.O.D. F.O.B. Detroit.  
Send 10c for our Illustrated Catalogue

**DETROIT GRILLE MFG., CO.**  
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## Letters

(Continued from page 14)

Gentlemen:

I just finished an article in the August copy of *MOTOR TREND* entitled "I Married a Car Fiend," by Jane Bade. I hope she can read this letter sometime.

I am also married to a car fiend, but I have found a solution. I decided to be a car fiend myself and I really enjoy it. We are mainly interested in hot rods. At the moment we are rebuilding a '36 Ford convertible. Next Spring we are planning to put in a '53 Chrysler engine. I am planning to try and get a '32 Ford pickup truck next spring too. I am going to soup-up the '41 Mercury engine that is now in our '36 and put it in the truck.

My husband and I are also very interested in racing. Particularly modified stock cars. Also, the hot rod clubs in the Twin Cities are trying to get a drag strip started.

Along with all this we are raising a daughter who is now eight weeks old . . .

Jean Costello  
St. Paul, Minn.

Gentlemen:

What a delight to read the story "I Married a Car Fiend" in the August edition of *MOTOR TREND* . . .

While out driving one Sunday, I noticed a car like one I had seen in so many books and pictures scattered about our three-room apartment. I casually mentioned it to my husband, who glanced at it, then did a double-take, yelling excitedly, "Hey, it's a Cord!" Barely missing a telephone pole, we came to a screeching halt and did a quick and grinding reverse. "And it's for sale!" cried my madman, jumping out and embracing the eggshell blue body with the greatest of tenderness.

Needless to say, we are now the proud owners of a '37 Cord, which is now in the process of being restored. With the immortal words "They don't make cars like this any more—it will last a lifetime with a few minor repairs" ringing in my ears, I, too, take my place with the women behind the men beneath the hood of a car, be it classic, customized, or "souped-up." Our husbands love us, but—oh, this *MOTOR TREND*.

Anyway, thanks for printing the story; nice to know that others have loved and married one of these "car fiends."

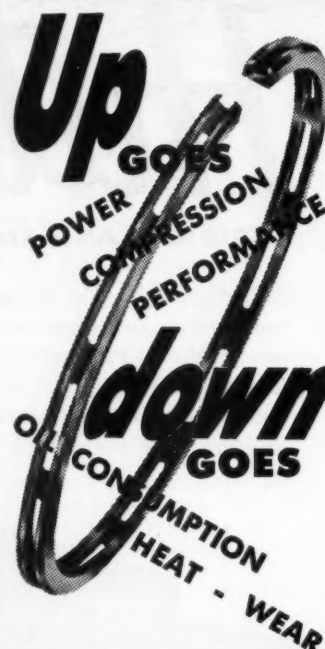
Mrs. John Rodgers  
Jamestown, N. Y.

Gentlemen:

Mrs. Bade is one wife in a million. Most wives raise the roof and won't speak for days when a fellow starts a custom or anything out of the ordinary. And to top it off, they act as if every cent spent on the creation was food stolen from the mouths of their children.

I spend much of my time at the local airport and many times I've heard the fellows complain that their wives took no interest in their activities . . . Possibly if they joined their husbands, they might like it . . .

A happy single man  
Rochester, N. Y.



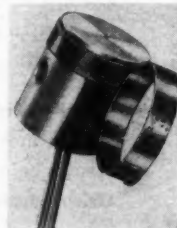
With every stroke the scientific design of Grant Piston Rings gives you "drag-free" lubrication for longer, more economical operation. So to raise your engine's efficiency and lower maintenance costs, choose the piston rings that work twice on every stroke.

## GRANT GOES ALL OUT

for Grant piston ring users by initiating the

Grant "Throw-Away" Piston Ring Compressor which insures positive sealing and alignment of your ring in the engine block.

Your mechanic receives his Grant rings mounted on your pistons—completely serviced and ready for installation—Grant, as always, leads the field, and has for the past twenty-five years.



Write today for Grant's free catalog—Literature and information on re-ringing. Learn how these scientifically designed piston rings eliminate drag, blow-by, drying out and scoring by constantly spraying back the excess oil through Grant Oil Rings.



**GRANT & GRANT**  
241 No. Westmoreland Ave., Los Angeles 4, Calif.

"I Married a Car Fiend" brought such acclaim from the fair sex that we've decided there must be at least a million wives like Jane Bade, rather than just "one wife in a million."—Editor.

#### K-F—WILLYS MERGER

Gentlemen:

Thanks for the news item about Kaiser-Willys on page 16 of the August MOTOR TREND. Please continue to keep us informed about this company and its products. "Spotlight on Detroit" is always interesting, and is the feature I always read first.

W. E. Jones  
Jackson, Miss.

We're keeping you posted; for the latest on the K-F-Willys merger, see page 92.—Editor.

#### YOUR HIGHWAYS

Gentlemen:

I am appreciative of your courtesy in sending me the copies of the June and July issue of MOTOR TREND. I was extremely interested in Mr. Robert Scollay's articles entitled "Your Traffic Problem" and "Rx for Your Town's Sick Roads."

As an administrator and engineer, I see almost daily the desirability and necessity for those who pay for our highways—the motor vehicle operators—to take a much more active and vigorous part in highway planning and legislation. It is of interest to me to note that landowners, business people, and highway abutters, who profit greatly from highways but contribute little financial support to them in most states, are the vociferous supporters or opponents of any matter pertaining to highways, while those who pay the bills are more generally conspicuous by their absence. While in this state we have an intelligent and able group of highway users taking an active part in highway matters, this seems to be more of the exception rather than the rule.

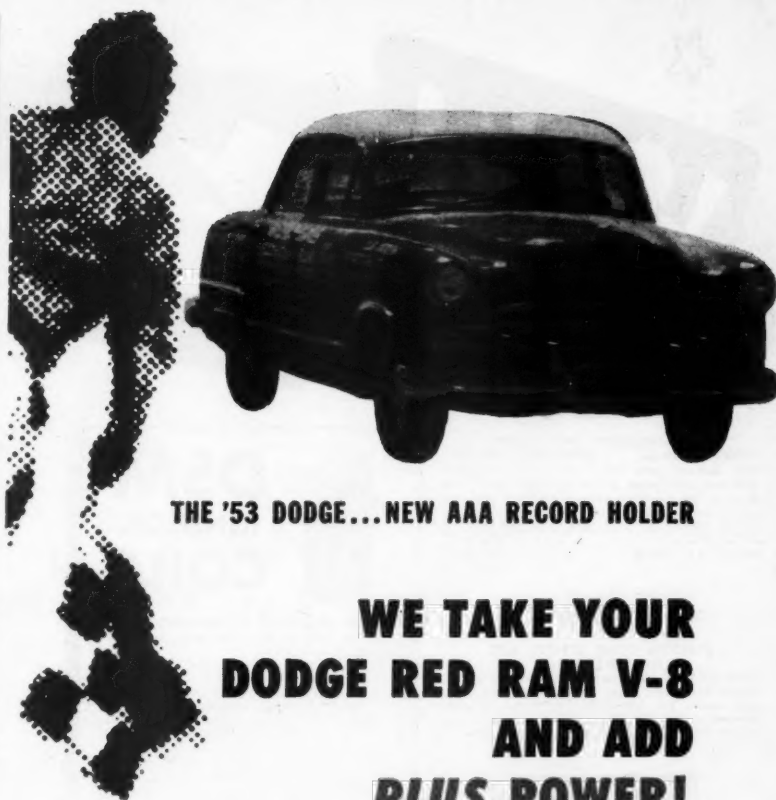
Therefore, in presenting the series of articles by Mr. Scollay, MOTOR TREND is bringing to the attention of the financial supporters of all highways the stake they have in the matter, which should be most useful.

Frank D. Merrill, Commissioner  
State of New Hampshire  
Dept. of Public Works and Highways



"Hereafter, Johnson, let me handle the trade-ins."

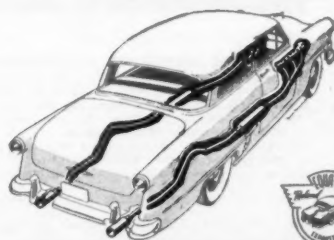
October 1953



THE '53 DODGE...NEW AAA RECORD HOLDER

**WE TAKE YOUR  
DODGE RED RAM V-8  
AND ADD  
PLUS POWER!**

The sensational Red Ram V-8 has recently set a new AAA stock car record of 102.622 mph for a flying start measured mile run; also it whizzed to a new AAA standard of 72.325 mph for a measured mile from a standing start. Its flashing performance is largely due to its remarkable hemispherical combustion chamber, turning more fuel energy into useful power. And the installation of a Belond EQUA-FLOW Exhaust System on the Dodge will add even more power...even faster acceleration and give you increased gas mileage. Streamlined design and precision-engineered headers virtually eliminate the back-pressure that cuts so drastically into power and speed. So, if you're keen on extra performance and you drive a Dodge or any other V-8 car — install a Belond EQUA-FLOW Exhaust System. Sold with an unconditional guarantee covering workmanship and material. See your nearby dealer or write for information.



*Southern California*  
MUFFLER CO.

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Seventeen





## FENDER SKIRTS IMMEDIATE DELIVERY

**FULL-CUT FORD-MERCURY SKIRT . . . 1952-53**  
Take a good look at this one! It's the tops in good looks. Notice it when you put it on. It's long . . . and we mean LONG. It fits the body lines . . . gives that sleek-trim fade-away appearance so much desired by the individual car stylist of today. We have them in stock and find that they are the hottest thing on the road today. Just buy 'em and clamp 'em on. No holes to drill. It is the locking lever arm type installation.

Order NOW **\$45.00 pr.** ☐  
(This skirt fits all 2-door and convertibles)

**FORD-MERCURY GRILLE BAR**  
**FORD-1949-52 MERCURY-1949-50**  
This famous grille bar replaces the original grille and adds much to the modern lines of the auto. It has excellent chrome plated finish and offers that much desired "customized" look.  
FORD 1949-51 **\$17.50** ☐  
FORD 1952 **19.75** ☐  
MERCURY 1949-50 **19.75** ☐



### CUSTOM FORD CENTER BAR For 1953 Models

Here is the popular new center bar which replaces the center bowl on FORDS, 1953. This bar covers the black striping giving a more custom appearance of one massive single bar.  
FORD 1953 **\$7.50** ☐



### FORD CUSTOM GRILLE

Now it's possible to hep-up that 1946-47-48 Ford with this beautifully polished grille. It lends that personal custom touch to your car. It will install easily and comes as a set in right and left sections.  
FORD 1946-47-48 **\$14.95 pr.** ☐



### NEW CUSTOM GRILLE FOR FORD . . . 1949-50-51

This beauty is designed and engineered to replace your present grille without any trouble. It's made of heavy gauge steel and finished with gleaming chrome. It gives that special massive-powerful appearance so much in demand.  
FORD 1949-50-51 **\$21.00** ☐



### "BULL NOSE" HOOD MOULDINGS

Remove that hood ornament and replace with these beautifully gleaming hood mouldings.  
FORD 1949-50 **\$2.95** ☐  
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CHEVROLET 1949-52 **3.95** ☐



### KAP-LOX

Stop that HUB CAP THEFT with this item. It provides positive protection from theft. KAP-LOX fits all full wheel covers where the valve stem protrudes.  
A complete set of four **\$3.25 set** ☐



## DSM IGNITION COILS

### DSM IGNITION COILS-UNIVERSAL

(When ordering give year, make and model of your car)

By far it's the greatest single improvement in automotive performance.

It gives: 1. Higher sustained top speeds; 2. Smoother engine performance; 3. Better gasoline economy; 4. Longer contact point life; 5. 30,000 volts output as your engine requires it; 6. Easier all weather starting. Yes, you gain many benefits from DSM too numerous to mention.

Coils come complete with mounting brackets. It installs easily with no new wires needed.

Order yours today! **\$15.25 ea.** ☐  
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### DSM DUAL-POINT Breaker Plate Sets

Engineered to work perfectly . . . give all-over smoother engine performance . . . higher speeds . . . more motor zip.

Available for:  
FORD V8 1949-53 **\$6.95** ☐  
FORD 6 1948-51 **6.95** ☐  
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### "LYNX-EYE" BLUE DOT

Stop and Tail Lamp Lenses  
1951 Ford **\$1.50 ea.** ☐  
1952 Ford **1.60 ea.** ☐  
1953 Ford **3.00 ea.** ☐  
1953 Chevrolet **1.10 ea.** ☐  
1953 Pontiac **1.35 ea.** ☐  
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1952-53 Mercury **1.25 ea.** ☐

### PLYMOUTH - DODGE - DeSOTO - CHRYSLER SKIRT . . . 1953

This skirt gives the Chrysler Products that sleek-lowered look along with customized appearance. Notice the bottom flare and its smooth lines. For all Chrysler cars . . . 1953  
**\$19.95 pr.** ☐



### BUICK SKIRT

Here is a very fine example of true-line skirts. This skirt fits into fender well and blends with the body lines. BUICK, 1950, all models; 1951-52-53 Super & Roadmaster; 1951-52-53 Special (this model overlaps)  
**\$14.95 pr.** ☐

### FORD-MERCURY-LINCOLN

\*Ford 1949-51 (ribbed) **\$ 9.95**  
Ford 1949-51 (cut down Merc. type) **14.95**  
Ford 1949-51 (flat type) **9.95**  
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\*Ford-Mercury 1952-53 (like original) **9.95**  
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Ply.-Dod.-DeS.-Chrys. 1946-48 **10.95**  
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Chevrolet 1946-48 (Fleetline) **12.95**  
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Chevrolet (tutor) 1949-53 (w/bottom flare) **19.95**  
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BOX SKIRTS Most Cars **9.95**  
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\*ALL CHROME SKIRTS **18.95**

(All above skirts have locking levers and adjustable ends)

**WHEN ORDERING GIVE  
YEAR, MAKE AND MODEL**

**MICHIGAN MOBIL PARTS COMPANY**  
**1301 MAYFLOWER STREET LINCOLN PARK 25, MICHIGAN**



## Let's Make Accidents **SAFE!**

By Vince Dudley

**S**AFETY COUNCILS and law enforcement agencies constantly urge us to be cautious, polite, and sensible in our driving habits. Vehicle inspections supposedly keep our cars in safe operating condition. But our accident rate goes up year after year.

Here are some of the major causes: First, no matter how often we are reminded to drive carefully, and no matter how skilled we may be, we are subject to human error. A second reason is well-meaning vehicle inspections: while legislation calls for our vehicles to be in good condition, the prescribed condition is nothing more than "standard operating condition," which in many cases is far from being the condition that our cars could, or should, be in. Highway conditions rate a spot among the top three because now, more than ever before, our highways are overcrowded. In some cases they are dangerously inadequate for modern motoring. There is no doubt whatsoever that by incorporating certain scientifically proven design features into our cars and the roads they travel on, we could materially reduce the accident rate. Yet, while these measures would mean fewer accidents, they would have little bearing on the death and injury rate *per accident*. The real problem in motoring safety is not only to reduce the number of accidents, but to alleviate—or

eliminate, as far as possible—the physical damage to driver and passengers in an accident.

Stepping into a typical modern American car, we are at once impressed by the unparalleled array of chrome, color and fabric. But we're here to appraise this car's safety, not its beauty. Side-stepping the obvious—dashboard projections, vision obstructions, poor instrumentation, etc.—we'll consider first the seats; nearly every American car will serve as a typical example of seat construction. The seats in our cars lack a really rugged attachment to the floor or frame of the car: they can withstand comparatively little stress without breaking from their mounting brackets.

Seat adjustment is another item. The most common type of seat adjustment is the manually operated, lateral track design; when the seat is moved forward, it rises. This forced compromise between leg room and height is entirely unsatisfactory to many drivers. It should be possible—on every car—to raise the seat independently of its fore-to-aft positioning. The power-operated seat offers the solution to this problem, but unfortunately it is available on only a few of our cars. Recent scientific tests have indicated that the individual bucket-type seat would be a boon to safety. Equipped with a quick-release safety

# Let's Make Accidents

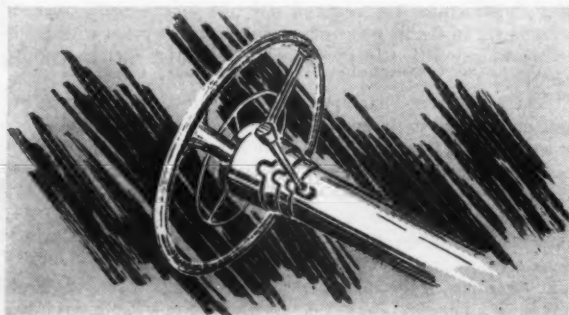
belt, the seat would incorporate a headrest (of the barber chair type) to minimize the possibility of broken necks from flying objects if the car were struck from the rear. The driver would be the only occupant facing forward in the ultra-safe car; passengers would face the rear, for tests have proven that the human body can withstand terrific impact in this position. How well this arrangement would be accepted by the public is a question we would rather not answer, for it is human nature for a passenger (whether he's in a plane, train, or automobile)



to want to see where he's going rather than where he's been.

The use of safety belts in race cars is common knowledge to the American motorist; for the most part, he understands why they are used—but he won't acknowledge their usefulness in his family sedan. In its '49 and '50 models, Nash offered an airplane-type safety belt with the reclining seat. This was intended to relieve the troubled mind of the passenger, who was thought to be fearful of a sudden stop which could catapult him from his restful position like a human cannonball. Nash discontinued the safety belt because *no one was using it*. There seems to be no particular reason why the safety belt is not popular. Perhaps people consider it inconvenient or unsightly (or maybe they're afraid of being thought overcautious). The safety belt should be called, very simply, a lifesaver. It has proved its worth time and again.

Many motorists realize that their car's steering wheel is not in the most convenient position for maximum comfort and control; but because they bought their cars for reasons other than steering wheel position, they consider the high, far-forward wheel nothing more than a necessary evil. Have you ever noticed that when you hold the steering wheel at the bottom of

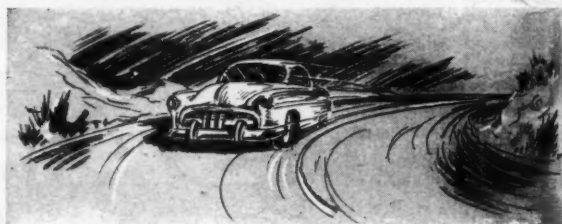


the rim, or at the crossbar, you do not have the control that is possible when you hold the wheel at the top? To drive comfortably with both hands on top of the wheel of some cars, most of us would have to grow longer arms. As it is now, many of us must actually bend forward to hold the top of the steering wheel.

Many cars have an adjustment that allows the steering wheel to be lowered slightly, but the available movement is usually insufficient; besides, this adjustment doesn't provide the convenience of a quick change in wheel position when someone else drives your car. On many European cars, by loosening a collar, the driver can easily and quickly shorten or lengthen the post to suit his needs.

Over a period a driver may become accustomed to the position of the steering wheel in his car, but let him drive with the wheel in the most favorable position for his physical requirements and he will usually notice a great improvement in handling; he will have faster, more accurate control of his car, and will feel on more intimate terms with his vehicle—as if it had been built for him.

As a rule, most mechanical aspects of our cars are compromises: they are either good or bad. But the steering column creates its own rules. It can save the driver's life in an accident that kills a passenger, or it can be the one thing that speeds the driver to his reward when the passenger survives. The passenger's side of the front seat has often been termed the "suicide



seat" because the passenger is more often hurt than the driver. While holding onto the wheel, the driver gains support from the steering column, while the passenger flies headlong into the dashboard or windshield. On the other hand, under severe impact from the front, steering columns have been thrust toward the driver, killing him or hurting him badly. The solution? A new-type steering wheel—one that would provide support up to certain limitations, yet would not injure the driver; a *telescoping steering column* might be the answer.

We have discussed the automobile and its ability to protect us in a collision; but is a collision necessary? The low-pressure tire, a product of our desire for comfort, has brought about mechanical changes not encountered in the days when the 6.00 x 16 tire was nearly a standard size. When you drive your car into a sharp turn, centrifugal force makes the tire flex or roll under, bringing the wheel rim on the heavy, or leaning, side of the car much closer to the road than usual. This action is more acute with the low-pressure tire than with the ordinary "hard" tire. Supposedly designed to give added passenger comfort, the low-pressure tire in this case allows more body roll. The roll-under of a low-pressure tire makes for sloppy steering, and with the car leaning more than a normal amount, there is a greater tendency for it to tip over. Steering is harder, whether the car is stopped or moving.

Poor steering characteristics of the low-pressure tire are offset by increased traction in snow or mud, added tire surface in



contact with the road when braking on wet surfaces, and smoother riding quality; but low-pressure tires have created a new problem that is not a necessary evil. While manufacturers have made cars with low-pressure tires easier to steer, control has been sacrificed in the process. To keep pace with the "big car—big tire" problem, the manufacturers have raised steering gear ratios to the extent that it is now difficult or impossible to maneuver some modern cars quickly in an emergency; the steering wheel simply requires too many turns for a hurried change of direction.

Power steering, now available on all but a very few of our cars, is a great boon to handling ease. It cannot keep the tire from rolling under the wheel, but it can provide quick steering in an emergency. As things stand now, however, most power steering units are only a convenience, for the car's steering gear ratio has not changed. Many of power steering's inherent advantages will remain untouched until the system is exploited for safety as well as convenience.

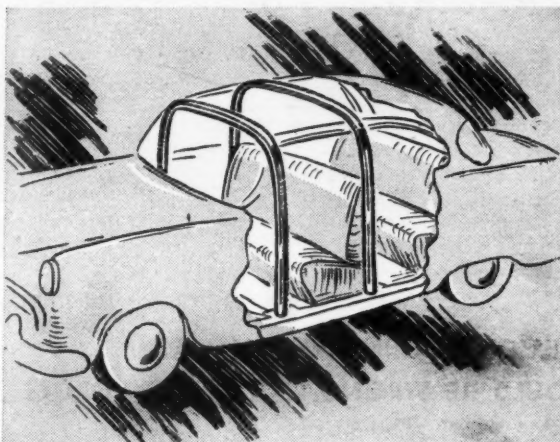
In many cases a collision could have been avoided if any one of the cars involved had had even *adequate* brakes. There is a definite limit as to how far we can go in obtaining high braking efficiency, the theoretical limit being 1G (a force equal to gravity); but while we may never reach that limit, there's no reason why braking efficiency can't be improved vastly over present maximums. With efficient design (not only in brake systems themselves, but in chassis and suspension design), we could obtain stopping distances shorter by at least 25 per cent. Such things as inefficient shock absorbers, unsprung weight, and poor weight distribution contribute greatly to braking inefficiency, instability, and wheel bounce when a car is brought to a stop from high or medium speeds.

As a result of the design changes required in springing to make our cars safer and more roadworthy, we would have what many people would call greatly reduced riding comfort. This is a common fallacy, for it is not necessary for a car to ride like a truck to have stability. In Europe, for instance, many cars feature all-around suspension utilizing the advantages of low unsprung weight; whether on a small, inexpensive car or a large custom-built machine, it is used to gain maximum riding comfort and roadability.

Would we really lose riding comfort in a car with top-flight roadability? To answer that, first ask yourself what riding comfort means to you. To many people, it means a "riding on a cloud" type of car—an air mattress on wheels; to others it means this: minimum body sway, with the passengers tossed less from side to side; less nosing down when the brakes are applied (passengers are not thrown forward so much); a minimum of "bottoming" (springs do not travel their full distance on highway dips). It all adds up to increased confidence and

relaxation for the driver and passengers, because they'd be in a car with excellent roadability and braking ability.

We've looked to changes in suspension for an escape from inadequate braking. If changes—radical or otherwise—are to be employed for safety's sake, then we must apply them to every phase of automobile construction. Changes in steering and suspension setups will leave us with a false sense of security; the chassis itself must be altered to give us full protection against the rigors of modern motoring. Modern cars are stronger than our older cars, but up-to-date construction attacks the obvious points, rather than ferreting out and correcting weaknesses. Better bracing is a must in the upper sections of *all* our cars to prevent crushed-in tops in case of a rollover. Roll bars are a practical necessity. The doors in our cars will open under impact, leaving the top and top supports more susceptible to damage if the car rolls over. The tendency of automobile doors to fly open under stress has been criticized before (and justly)

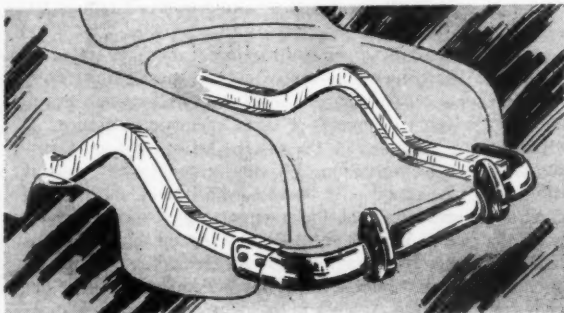


but usually for another reason: it allows the passenger to be thrown out onto the street or under the car. However, the door shouldn't be called upon to keep a passenger in his seat: other safety features should do that.

Bumpers, as we all know, are used to protect auto bodies from damage in minor collisions, yet few bumpers do the job. They are illogically rounded or slanted in cross-section, instead of being flat-faced or concave. Wrap-around bumpers are fine—but not in the way they are applied to present cars. Their effect is that of a giant fishhook when two cars sideswipe each other. The resulting snag can send a car into a spin, tip it over, or swing it around into oncoming traffic. One very sensible solution is to have the bumper ends turn inward and join the car's frame. The bumper would then present a smooth, continuous surface to deflect any glancing or head-on blows.

It may be stretching a point to suggest that modern powerplants present a problem in safety, but we might question the facts as they exist today. It is true that a powerful car (if driven properly) can sometimes get a driver out of an unexpectedly dangerous situation. But for every such situation there is the driver who, whether through lack of skill or for the desire to show off, will misuse this power. This is not to imply that modern cars are dangerous just because they are powerful; rather, let us consider whether the present trend to more and

(Continued on page 83)





**MILLIONS OF INSURED AMERICANS  
COULD BE WRONG, BUT DON'T FORGET . . .**

# It Could

**O**NE MILLION AMERICANS could be wrong. Morning after morning, they whip their cars onto the streets and zoom merrily off to play a day-long game of hit-or-miss. The only rule to their game is that each player's car must be uninsured, and the people who play are quite willing to oblige. They don't want insurance. They see no tangible benefits to a policy. A car doesn't start any easier when it is insured. It doesn't get any better mileage with a policy riding in the glove compartment.

If percentages mean anything, one million Americans could be very wrong, for more than 30 million Americans are convinced that insurance is a commodity that shouldn't be sold short. The 30 million are policyholders in any one of 15 major insurance companies, and they worry about the guy down the street who "never had insurance and never had an accident." They won't bet that he'll continue free from accidents forever. Only one driver in 10 thousand will be that lucky. The other 9999 are going to get caught. They are inviting law suits, repair bills, expensive judgments, and even loss of their right to drive.

The right to drive is regulated, in most states, by a Financial Responsibility Law. Forty-five of the states have these laws in effect, and failure to meet the requirements could result in having one's driving privilege revoked.

If each driver could be absolutely certain that he'd be the one out of 10 thousand who would never have an accident and never

be involved in somebody else's accident, he would need never worry about insurance policies or financial responsibility laws. His home, his car, his future, and his right to drive would all be protected, but even a Ouija board can't pick the right man from 10 thousand applicants.

When an accident happens, most state financial responsibility laws hold both drivers responsible. Because the idea is to provide adequate payment to an innocent party, these laws can be tough. They can force a driver to post as much as \$11,000 with a state-designated agency. The money is refunded if the driver is cleared of guilt, but the prospect of raising \$11,000 can be as tough as meeting the Federal payroll with a wad of Confederate currency.

Actually, things are not as bad as they seem. The states do have hearts. The drivers have three outs in most states. They can put up spot cash, purchase a bond to insure payment in the event of an adverse judgment, or carry adequate insurance.

Of the three, insurance is the easiest, safest, and most economical method of protection. A savings account could work if a driver knew he would never have to dip into it until he had socked away enough to meet any emergency, but few drivers can be that sure. A bond does not provide money to meet a judgment; it merely guarantees that a specified sum of money will be ready for payment when such a judgment is issued. The money used in such payments is the driver's money. Insurance

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is the only method which can provide up to \$100,000 in funds at a cost of between \$65 and \$200 a year.

How much insurance does a driver need to be covered? In most states, a policy of 5, 10, and 15 limits will meet the law's requirements. Such a policy is a bodily injury and property damage policy which would pay up to \$5000 for injury to a person other than the driver or passengers riding in the insured's car. It would pay up to \$10,000 for any number of bodily injury claims, regardless of number in any one accident. It would also pay up to \$5000 for property damage.

Many drivers are finding that these limits are not enough for today's driving conditions. Bodily injury suits of \$20,000, \$40,000, and even \$75,000 are becoming the rule rather than the exception. Much of this increase can be attributed to a higher cost for medical treatment and auto repairs, but some of the increase is due to the fact that accident victims are discovering higher judgments can be obtained because, as one lawyer put it, "Juries are now awarding judgments on sympathy, not on facts."

There is no yardstick to use when purchasing insurance. The limits and types of insurance which constitute adequate protection vary with each individual. To help provide complete protection for every driver, most companies offer several varieties of coverage. A driver can purchase bodily injury, property damage, and medical payment coverage to protect people injured by his car and to protect property damaged by his negligence. He can purchase collision, comprehensive, and fire and theft to protect his own car and property against damage. A combination of these coverages can surround a policyholder with a positive circle of protection.

In the past, the 5, 10, and 5 limit for bodily injury and property damage was considered adequate for an average driver, but since the war most agents feel that even double that amount is a bare minimum. If a driver owns his home, bonds, or other holdings, an even higher limit is advisable. No matter what the policy limit might be, if more than one person drives the family car, it is best to extend the coverage to all drivers.

Passengers are a different problem. Some states, such as

involved in an accident, V.S.I. would pay off only if the purchaser did not choose to repair the car and did not meet future payments; and the money which V.S.I. would pay off would be to the dealer or lending agency. Collision insurance can be amended to provide this same protection to the dealer or lending agency, while it affords complete protection to the purchaser of the car. It provides for payments to the car owner in collisions which are not the fault of another party. This kind of policy comes in several types. All offer the same basic protection, but differ in the method of payment and in the degree of liability.

The most popular type of collision insurance is a "straight" deductible policy. The policy holder agrees to pay the first \$25, \$50, or \$100 of each and every accident cost, and the company pays the amount over that specified sum. The amount of deduction depends upon the policy. It is either \$25, \$50, or \$100, but never a combination of the three. The lower the prescribed limit, the higher the premium.

Another type of collision insurance is the "sliding scale" deductible policy. Here, the amount which the policyholder pays is arranged so that it varies with the total bill claimed. The policyholder agrees to pay the entire bill if it is \$50 or less, and the company agrees to pay the entire bill if it is \$100 or more. Both parties agree to a varying ratio of split on amounts between \$50 and \$100. For example, if a repair costs \$60, the policyholder pays \$40, while the company pays \$20; but if a bill should be \$75, then the policyholder pays only \$25, while the company pays \$50.

Another kind of policy which is written in some states is known as the "80/20" policy. Under this policy, the policyholder agrees to pay 20 per cent of each repair bill, while the company will pay 80 per cent. On small bills this works out well for the policyholder, but in the event of a really big accident, the policyholder's 20 per cent could add up to big money.

Comprehensive insurance offers protection for damage to a car's interior or exterior in all situations except actual collision. If a window is broken, the paint is scratched, the car burnt

# Happen To You!

By  
Robert  
Lee  
Behme

California, have a "guest law" in effect which provides that passengers cannot collect judgments from a driver unless they can prove "willful neglect," but since the medical coverage for passengers is perhaps the cheapest of all coverages, it is best to carry it along with bodily injury and property damage.

The bodily injury, property damage, and medical coverages are called the "casualty" portion of a policy. They protect a driver against judgments from damages he may inflict on other cars, people, or property, as well as providing medical relief for his passengers. Even with such coverage, however, the casualty portion of a policy represents only one side of the insurance picture.

A fully rounded coverage, which will completely protect a driver and his auto, should contain some parts of the "material damage" portion as well. The "material damage" section of an insurance policy includes collision, fire and theft, and comprehensive coverages.

Collision insurance normally covers the car and not the driver. When an accident occurs, collision can mean the difference between driving a rebuilt car and driving a "wreck." Some dealers try to protect their investment by requesting that the purchaser buy Vendor's Single Interest insurance. V.S.I., as it is called, affords no protection to the purchaser. He pays the premium, but the policy merely protects the investment the car dealer or lending agency has in the car. Should the car be

or stolen, it provides payment to the policyholder.

Some older cars whose condition is such that they cannot be covered by comprehensive because of broken windows, peeling paint, or other deterioration, can be protected against loss by theft or fire with a separate fire and theft coverage. If possible, the comprehensive policy offers better value since it provides complete fire and theft coverage in addition to other material damage protection.

The condition of a car is not the only aspect which influences the decisions of an insurance company. They seem to shy away from cars with speed equipment or custom extras. One insurance executive said, "The first thing we look at is the engine. If it has heads, dual carburetion, a special cam, or dual exhaust, we take a second look at the owner. If he is a respected, stable citizen in his community, we'll insure him, hoping he's just an enthusiast. But, if he's young, we are likely to assume he will be racing the car at drag strips or jalopy races, and we shy away. Our policy premiums are too small to take added risk."

Whether this outlook is a true picture or not, heads and other speed accessories can make the insurance agent wary. Agents have not yet reached the point where they can understand the drivers who have a feeling for anything other than a stock car. The same view holds for custom cars. If a custom car has been built from stock components which have been put together with

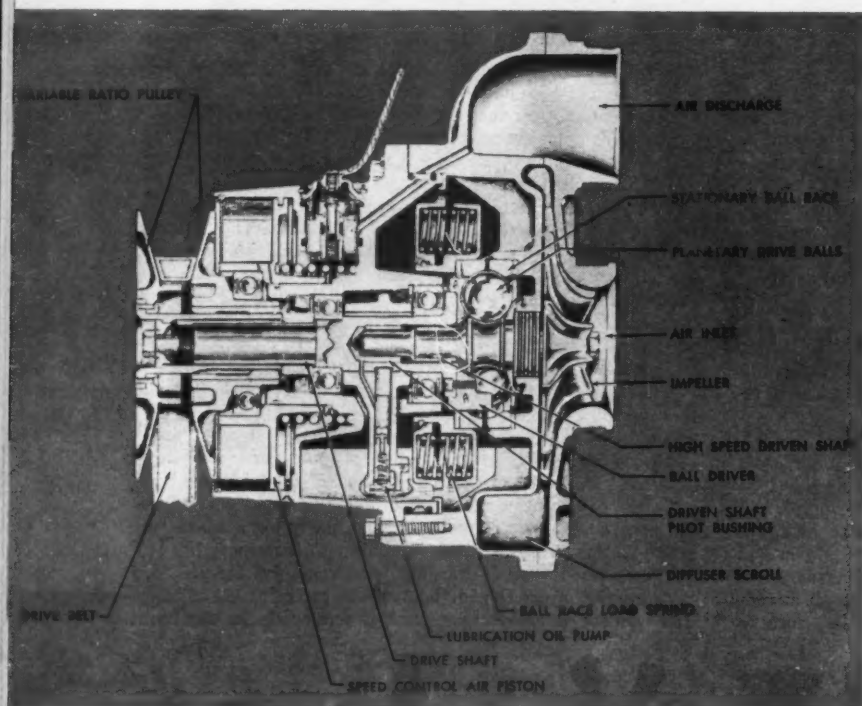
(Continued on page 74)



No gimmick, the latest news from  
versatile McCulloch Motors adds up to

# SUPERCHARGING MADE EASY

By Dick van Osten  
Technical Editor



**T**HE SUPERCHARGER has long been one of the most controversial pieces of machinery ever designed for the internal combustion engine. The two basic types are the Roots (positive displacement) and the centrifugal. With all the in-between modifications and combinations of the two, they have touched off some frantic discussions between mechanical engineers. Each type has certain advantages and disadvantages in principle, but the amount of energy consumed arguing about which is best would probably efficiently operate every supercharger ever built.

To those unfamiliar with the principle of supercharging, a note of explanation. A widely used dictionary defines "supercharger" as "a blower, pump, etc., in an internal combustion engine for forcing more of the mixture of air and gasoline vapor into the cylinders than the action of the pistons would draw." This is the thought behind supercharging regardless of the methods involved.

The Roots-type operates on the same principle as a gear-driven water or oil pump. It (and its many variations) operates at all engine speeds but is noted for

the large amount of horsepower required to drive it.

The centrifugal type is often referred to as a "cream separator"; its principle is to increase pressure and velocity by means of centrifugal force. This type consumes less horsepower than the Roots type but is less efficient at lower engine speeds.

We knew that McCulloch Motors, a progressive industrial concern in Los Angeles, was working on a supercharger. We wondered just what it would be. There are a lot of so-called "superchargers" on the market that are nothing more than vaporizers for fuel. Then there are all the imported types that are excellent but expensive. We could not imagine that McCulloch would risk its reputation (right at the top in other fields) by producing a gimmick.

After one look at the first model and the subsequent installation on every make of car imaginable, we knew that the company was serious in its efforts to produce a low-cost, efficient supercharger for the American driver.

Selecting the centrifugal supercharger as a starting point, McCulloch has developed its own axial-flow version that incor-

porates some novel mechanical features.

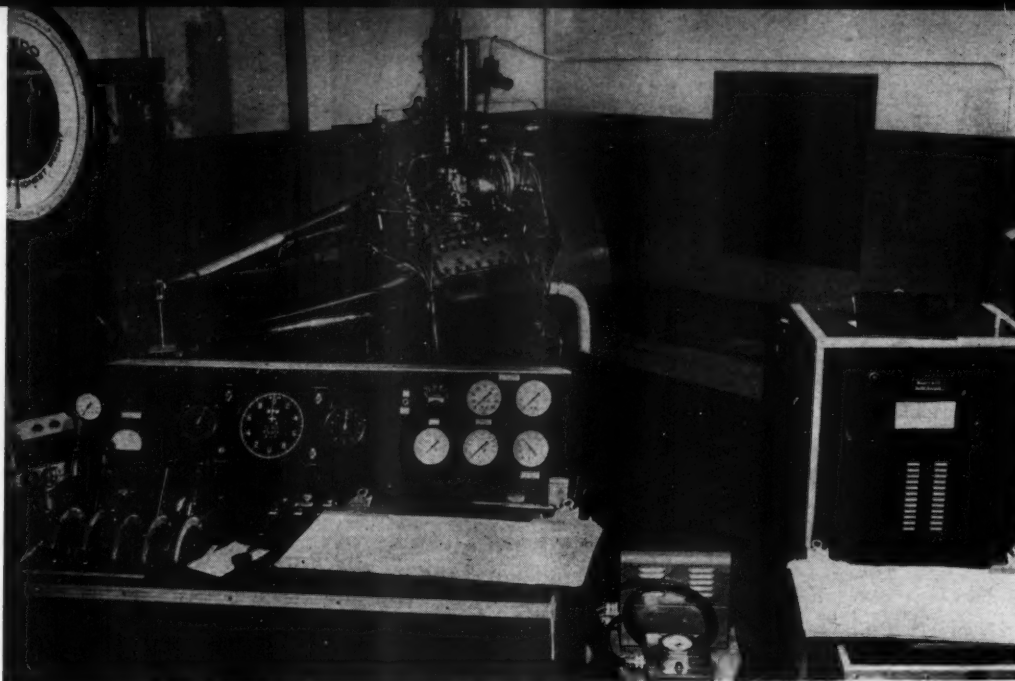
To overcome the low output of the centrifugal type at low engine rpms, a variable-ratio driving pulley is used. This unit consists of two pressure-operated pistons that retract the inner flange of the pulley at low pressure, allowing the V-belt to drop further into the pulley base. With this decrease of pulley "diameter" and the use of a large and constant-diameter crankshaft pulley in conjunction with a spring-loaded idler pulley, the supercharger turns faster at lower engine speeds for a greater output of pressure. At normal road speeds the variable-ratio pulley automatically selects the proper flange setting so that the supercharger pressure is neither too little nor too great.

Another unique feature is the ball-bearing version of a planetary drive unit. This establishes reduction ratio of 4:1. (Although "reduction" is a misnomer from a functional standpoint, it is the correct term for the unit. Actually it *increases* the ratio of the supercharger rpms to engine rpms.) As the unit turns 29,000 rpm at 3000-rpm engine speed, the additional increase over the 4:1 ratio is taken up by the variable-ratio pulley.

The split ball-race feature has many other uses than in the McCulloch supercharger, and you may expect to see it in other industrial and mechanical applications. It is extremely durable as well as efficient. It also eliminates the often-objectionable noise of the star gears in conventional planetary gear systems.

Lubrication of the supercharger unit is self-contained within the base of the main casting. It has its own oil reservoir and pump to eliminate possibility of foreign particles entering bearing areas.

Another switch from most of the superchargers currently offered is the fact that the McCulloch unit pumps through



*Test-bench runs have produced blower speeds to 75,000 rpm without failures*

the carburetor. There are two reasons for this: In the first place, hood lines on late model cars are so low that little or no room remains to raise the carburetor and air cleaner. Second, it makes installation far simpler regardless of the make of car. All stock throttle linkage, etc., may be used with the supercharger kit.

An additional technical advantage to the route through the carburetor is that icing, due to the pressure drop in the standard carburetor, is eliminated. Fire hazard is eliminated by pressurizing air only, rather than fuel vapor, which has a tendency to be thrown to the outer edge of the centrifugal-type supercharger, build up, and explode.

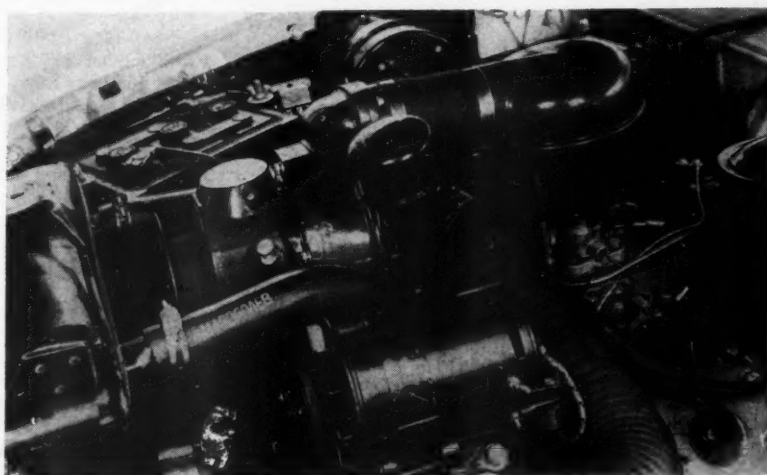
Pressure in the manifold (below the carburetor) is maintained at a constant five to six pounds per square inch under normal operating conditions.

McCulloch found one of those deceptively simple solutions to a main problem in an installation of this type, equalization of fuel pressure between the pressurized carburetor and the fuel pump. A line from the manifold to the base of the fuel pump diaphragm carries the supercharger pressure as a booster to normal pumping pressure. The only modification necessary to the carburetor is enlargement of the power jet.

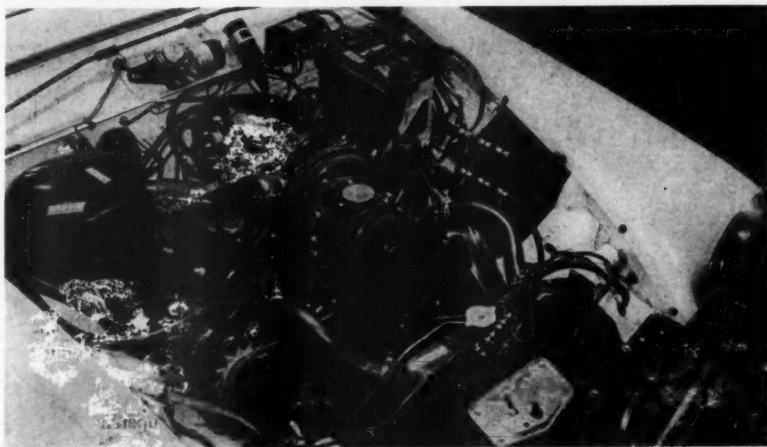
One distributor modification is required: a change in the vacuum advance unit. A suitable replacement is part of all supercharger kits.

The supercharger is suitable for all makes of cars up to 350 cubic inches piston displacement. The discharge scroll that attaches to the carburetor intake revolves in 10-degree units to suit installation requirements.

The entire operation of the unit depends on the impeller. Cast from an alloy  
(Continued on page 70)



*Mercury kit is installed easily. Blower eliminated common high-speed "fade-out"*



*Installation in the Studebaker illustrates supercharger's compactness and simplicity*



# Phones

By Ernest J. Antrobus

**T**HE GIRL NEXT DOOR and Mom's apple pie, we are told, are the top reasons our GIs wanted to come home from overseas. Runners-up were TV and car telephones. *The New Yorker* ran a series of cartoons on mobile phones, illustrating all sorts of mad contingencies from a professional chatter still telephoning while draped over a tree above her demolished machine, to a country doctor with an old-fashioned wall phone mounted on the centerpost of his ancient car.

Joe has married the girl next door, eaten his fill of pie, and (if he's lucky) found an antenna that brings in all channels. The car phone is no longer hot news. Instead it has quietly become as familiar as a steering wheel to some 12,000 U.S. users. To find some of the facts behind its success, *MOTOR TREND* went to the Bell System and to the largest two-way radio service in the country.

What happens when you are cruising along and want to make a call? Simply lift an ordinary-looking handset from its cradle on the dash and signal the mobile service operator with the "talk" switch. The transmitter (it's probably mounted in your trunk) does the work, and in a matter of seconds the operator has dialed a number for you.

If you want to place a call from a more conventional phone to a radio-telephone-equipped friend, dial Long Distance. Give the operator your friend's number, which will be something unlikely sounding like ZM 6-3474 to avoid confusion with local numbers. The mobile service operator sends a signal from the main transmitter, and next moment a bell and a flashing light call the driver to answer his phone.

Your traveling friend hears your voice over the radio link from the main transmitter. His voice goes from the car's transmitter to the nearest receiving station and back to you via telephone wire.

For the ultimate in personal communication, you can talk with another car, the *Orient Express*, or a BOAC passenger jet over Southern Rhodesia. Yet the most dramatic conversations recorded to date have taken place in New York and suburban Cook County.

A New York physician was one of the first telephoners on wheels. En route to four hours of home appointments, he received a call from a woman four months pregnant. Her violent abdominal cramps did not suggest labor pains. Within an hour, he had rushed her to the hospital. Later he told reporters, "The appendix was as nearly ruptured as it could be. Had there been a four-hour delay, the mother and baby might not have been saved. This case alone was worth the investment."

On a glum black stretch of road outside Chicago one night, another car suddenly forced a lone phone-equipped driver into the ditch. Two thugs ordered him out of the car, beat and robbed him, and sped away. With comparative calm, he did just what you would do at home in an emergency; he called the cops. In minutes the bandits' description had gone out over the police radio-telephone, they were under arrest, and doctors were repairing the injured man's wounds in a hospital.

Begun by the Bell System in St. Louis in 1946, the new radio telephone system quickly caught the eye of big business. Soon a pleasing drop in costs appeared on the books of many companies. A large California produce concern pocketed \$18,000 the first year it used mobile phones. How? Truck drivers reported in regularly by phone, and the number of wasted trips dropped to virtually zero.

When a ready-mix cement truck cracked up, its driver simply phoned for another truck to pick up his load. Hundreds of dollars' worth of cement, which a few years before would



# on Wheels

***What ever happened to those car telephones? A wartime dream has become a part of daily life for thousands of Americans***

have petrified there in the wrecked truck, arrived per schedule at its destination.

What does radio telephone service cost? Installation costs vary slightly across the country. Average is \$50 installation and \$25 monthly service charge for a two-way system. Costs per call average 30 to 40 cents for three minutes.

Other mobile services cost less. Dispatching service requires a direct wire from the mobile service operator to the customer's dispatching office. Signaling service is a one-way setup between the mobile service operator and the customer's mobile unit. When the driver gets a signal, he stops and calls in on a public phone.

As a rule the telephone company owns the mobile equipment. If you like, you can buy and maintain your own. In either case, you'll need a receiver, transmitter, antenna (this usually goes on a rear fender) and handset. Because it uses FM, radio telephone service is extremely clear. Urban units use 152 to 162 megacycles, highway units 30-40 megacycles.

Lest you are at this moment dialing "O" to order immediate installation of a radio telephone in your car, a word of warning. For four years, mobile phones have been subject to an FCC priority rating. If available channels are nearly filled, the chosen categories are: (1) public safety and health; (2) contract and common carriers and utilities; (3) emergency repairs, newspapers, and broadcasting stations; (4) physically handicapped; (5) industrial; (6) traveling public (trains, buses, and boats with service for passengers); and (7) all others. Unless we can qualify in the first six, that ignominious "all others" means you and me.

When we consider some of the calamities averted, the priority system makes good sense. More than one forest ranger has phoned from his truck to direct fire-fighting equipment to a small blaze, preventing destruction of thousands of acres of public timber. The ranger's priority rating, of course, is Number One: public safety and health.

But perhaps some day we will most appreciate the ubiquitous

radio telephone just because it can eliminate much of the worry in modern life. Is Susie late getting home from school? Has the school bus had a flat? Chances are the driver has already phoned and had another bus pick up the children. If you're concerned, just pick up the phone from your table or dashboard, and ask him.



# Those Shocking Seat Covers



JACK CAMPBELL

## BUYING SEAT COVERS? DON'T BE SHY—BE SHOCKING!

A photo story by Felix Zelenka



Bright, rose-patterned chintz seat covers assure the owner of complete individuality



Chemical sprays, sold at most seat cover shops, curb effects of static electricity

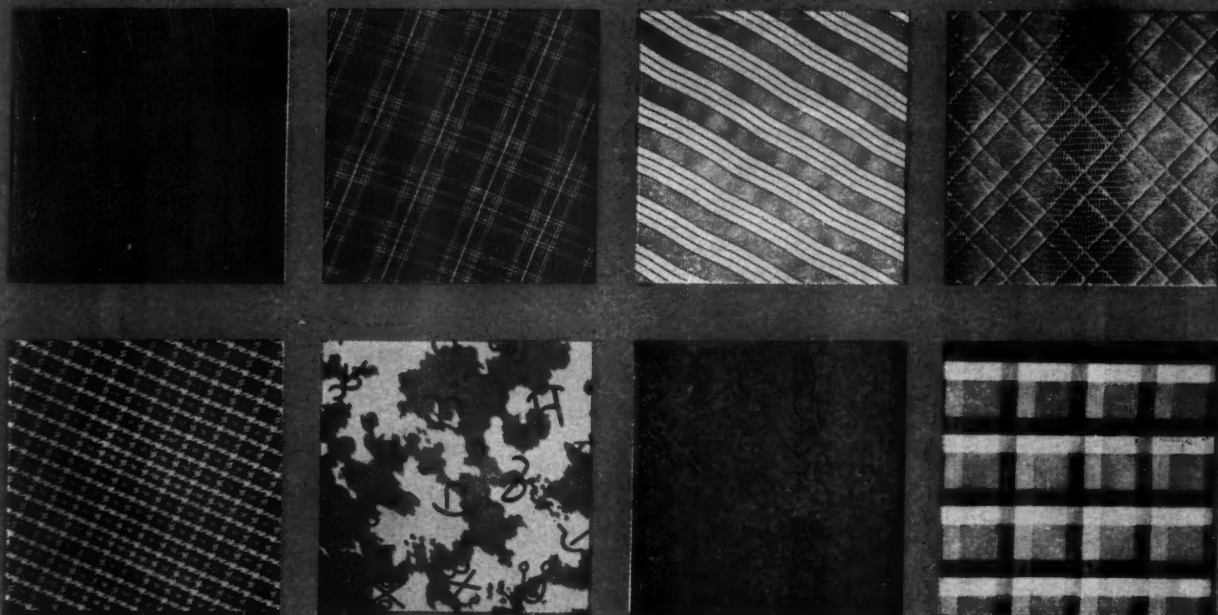
WITH THE WIDESPREAD acceptance of plastic as an upholstering material, there has come into being a large variety of patterns and textures from which the car owner can choose the seat covers most suited to his likes and needs. These seat covers have a unique ability to affect people in the strangest ways; in fact, it is quite possible to install in your car a set of seat covers that can be as shocking physically as they are visually.

A set of brightly colored seat covers affected one car owner to the extent that he would get out of his car only by leaning over the seat, pushing down on the door handle with his foot, and sliding out from under the steering wheel in a "Look, Ma—no hands" fashion. The culprit behind this man's discomfort was not the shocking psychological effect of the zany pattern of the seat covers, but that common-but-mystic phenomenon called static electricity. This man was actually being shocked physically by his seat covers. Plastic seat covers are not the sole offend-

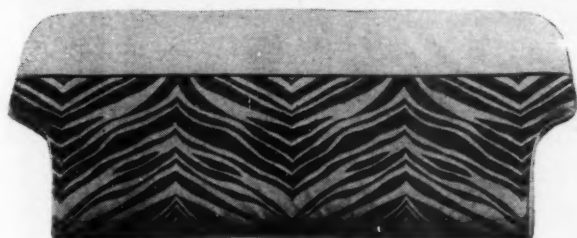
ers, for the phenomenon is equally apparent in cars equipped with nylon, rayon and even wool upholstery.

Had this "human lightning rod" touched a grounded piece of metal on his car before reaching for the door handle, the static charge generated by his sliding across the seat would have passed harmlessly through his body; however, few drivers care to be preoccupied with observing the physics of electricity. To alleviate the problem, upholsterers have woven grounded copper wire into the seat covers, or attached wire mesh straps between the seat covers and the metal seat frame; but because of the bother of installing these contraptions, another method is usually employed. This quick and easy answer to the problem is the use of anti-shock chemical sprays. For sale at most auto upholstery shops, these sprays, however successful they may be, have a limited life, depending on the use the seat covers receive.

In all fairness to the seat cover material manufacturers and the producers of anti-static sprays, a warning: the customer



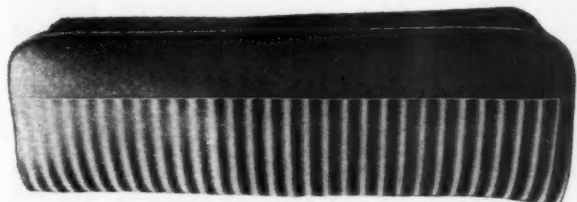
Scope of patterns and color is as unlimited as your imagination. Top row: imitation alligator, in deep red as below; subdued, multi-colored plaid; Kelly-green swirling stripe; embossed leatherette. Bottom row: red, white, and black houndstooth; imitation unborn calf; "hand-tooled" leatherette; wide, bright plaid



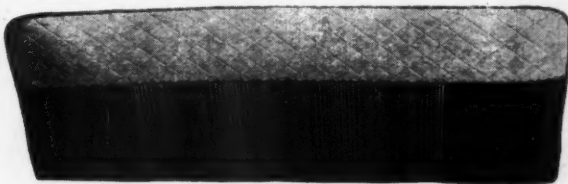
*Zebra-like covering is bordered by neutral edging*



*Imitation leopard skin is bound with tan leatherette*



*Bold "awning stripe," trimmed with white piping*



*Multi-colored stripe has contrasting, mottled trim*

who expects absolutely shock-free seat covers should have the seat of his pants treated as well, for modern clothing materials play a vital part in creating electrical shocks. One lady motorist, supposedly shock-protected, insisted that a shorted wire was giving her a jolt each time she touched metal. It took a great deal of time and patience to convince her that the seat of her trouble lay in her clothing materials, not in faulty wiring.

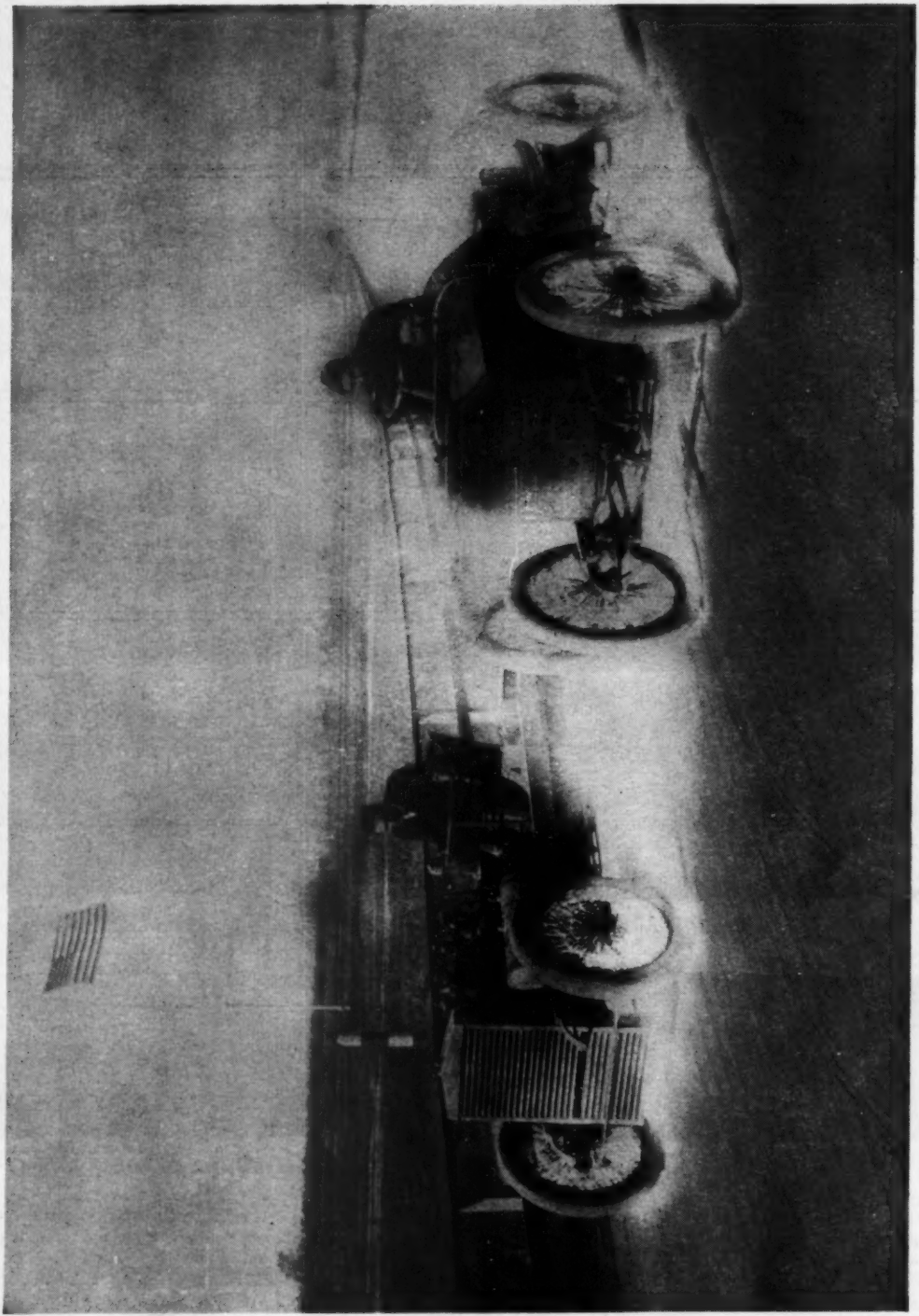
Other car owners receive a large charge from modern seat covers, but the charge is strictly emotional. For instance, if you see a man driving down the street wearing a 10-gallon hat, chances are it's just an Easterner who's gone Western. On close inspection, you'll probably find that this quasi-cowboy's seat covers are imitation unborn calf or cowhide; depending upon how "gone" he is in his Western attitude, his seat covers may or may not be em-

blazoned with realistic cattle brands—bar none—or with steer heads, shootin' irons, and saddles.

To please the more fanciful buyer, there are seat covers boasting only the most nervous bold stripes, zebra stripes in frantic colors and prismatic plaids that dance before your eyes like a Highland Fling or that last double Scotch. You can be sure that in plastic weaves or leatherette, the

*(Continued on page 67)*





*At Full Speed*

HENRY FORD ON \$99 VS. \$119 FORD STAMP EX.

There have been faster, more dependable cars, but none have contributed as much to the world of motoring history as Henry Ford's famous old . . .

“999”



By Donald MacDonald

**D**ETROIT, in 1902, was full of made-over stables, ex-carriage works, and carpenter shops that passed for automobile factories. From their doors issued many a strange collection of nuts and bolts. Among the more prosperous “factories” was the Detroit Automobile Company (Henry Ford, chief engineer). On the side, Ford was organizing his own company, and he knew that success in the infant auto industry was more intimately connected with promotion than production. The man who was master of the delicate art of recruiting funds from those around him stayed in business during the lean years when cars were the playthings of the rich.

The vast Rouge empire and the many thousands of Model T's and A's that still chuff happily along in the dust of their V-8 cousins are visible evidence that Henry Ford had what it took; but it is a lesser known facet of his superb salesmanship that concerns us here.

Back in 1902 the world's land speed record of over 112 mph was held firmly by a precocious New York Central locomotive numbered 999. A good horse could keep up with the average motor car at the time Ford and a bicycle-racing crony, Tom Cooper, first conceived the idea of building a couple of racing automobiles. The sales aspect was obvious. The speed and endurance of a record-breaking Ford racer would influence the public to attribute similar virtues to the forthcoming Ford production car. Other men had similar thoughts; Alexander Winton was working on his “Bullet,” and a young Harvard student named Cannon was planning to construct a steam-driven machine (which ultimately became so complicated that two men were required to run it).

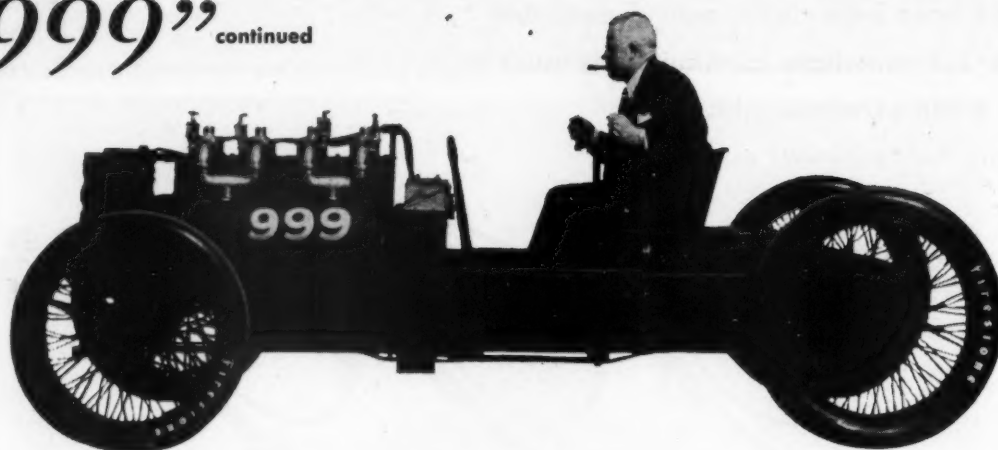
The red brick building on Bagley Avenue soon hummed with activity. The Detroit Automobile Company was about to change

its name to Cadillac, and its personnel were busy designing the prototype of the “Standard of the World.” Chief engineer Ford, never completely agreeing with this slogan, was off in a corner putting the finishing touches on two monstrous racers. The first, painted a bright yellow, was destined to an obscure career ending in an inglorious death in combat. The other car, however, painted very bright red, was to sputter and fume across the pages of motoring history, creating and breaking records, finally coming to rest in plush retirement within the marble halls of Dearborn's Edison Institute Museum.

The great red car was unveiled in October, 1902. It cost \$5000 to build, a considerable sum in those days. The event created some stir in the local press; a contemporary issue of *Scientific American* gave the car a full two-page spread. By this time both Winton's Bullet and Cannon's steam racer were completed and running, but the writer of the article placed his bet on the Ford-Cooper Special in the forthcoming auto derby. A picture showed Henry Ford sitting serenely at the tiller—serenely, mainly because the car wasn't running when the picture was taken! What the *Scientific American* didn't know was that at the time of the writing, the car not only *wasn't* running but *wouldn't* run, and neither would the yellow “Arrow” when it was rolled out of the shop.

The stillborn machinery in the Ford-Cooper Special was very interesting. The integrally cast engine was undoubtedly the largest four-cylinder powerplant ever to be put in a car. Accurately predicting the present-day trend to “square engines,” Ford bestowed on his behemoth a seven-inch bore and seven-inch stroke. Its massive piston displacement of 1080 cubic inches was about four and one-half times that of the modern V-8. In 1902 bigness meant horses under the hood, and Ford

# “999”<sup>continued</sup>



*Charley Daester, of Ford museum, keeps the red racer's number bright, its brass shiny*

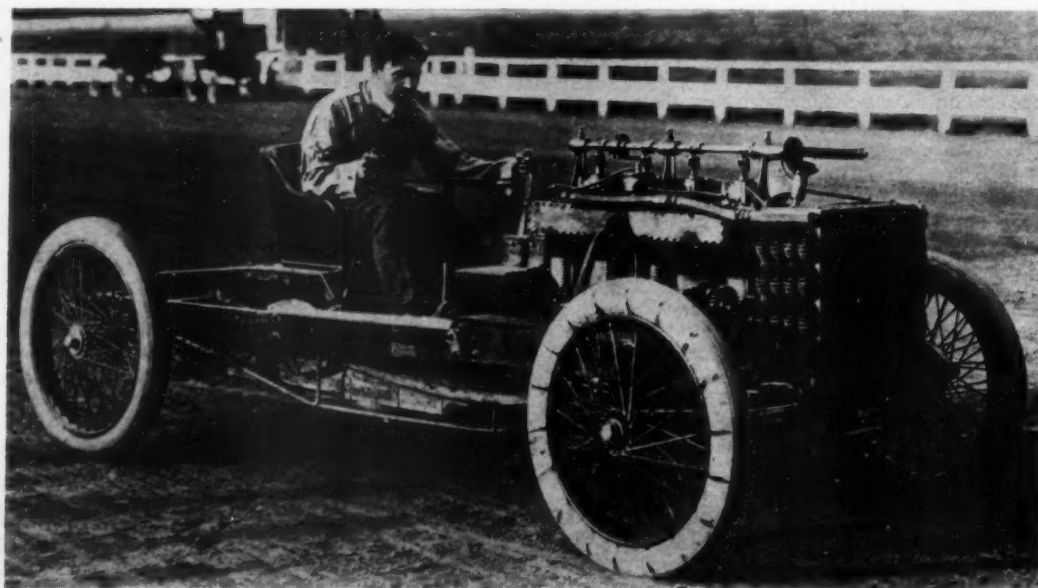
let it be known that his machine developed the equivalent of 50 to 75 of them, a most impressive number for 1902.

There were separate exhaust pipes for each cylinder, a practice still followed in racing cars, although nowadays the pipes are not necessarily the same diameter as the exhaust valves. While the exhaust valves rode a cam in the usual manner, the intakes were opened by the suction of their respective cylinders. This neat arrangement worked very well, except at high speed, when the intake valves lagged a few strokes behind the pistons.

The crankshaft was optimistically provided with a dirt protector, but aside from this, the rotating parts were exposed to Michigan mud. Attached to the crankshaft was the colossus of all the colossal pieces making up this engine, a 230-pound flywheel, two feet in diameter and half a foot thick. Picture three good-sized manhole covers stuck together and rotating furiously an inch from your shoes, with no floorboards to guard against amputation! Early “hero drivers” earned their reputations!

A wooden-block clutch expanded against the inside rim of the flywheel, engaging a shaft which drove the rear wheels without benefit of transmission, universal joint, or differential. The red racer had no rear springs. It took Ford many years to be convinced that a rigid suspension was not necessarily desirable in motor cars, but this was the zenith. The ring and pinion gears which composed the rear end were exposed to whatever mud and dust managed to escape being sucked into the engine. The ratio was a rather unusual 4:5, which combined with the 36-inch rear wheels to produce a kind of super overdrive: 700 rpm propelled the car one mile.

Perhaps it was just as well that the rear end was lubricated with grinding compound, for it is hard to see how any but a set of well-worn, loose-fitting gears could ever survive the punishment meted out by the crowbar-stiff suspension. There is a fable about the immovable object meeting the irresistible force which tells us that despite the adjectives, something has to give.



*Barney Oldfield, seen here at Grosse Pointe track in 1902, won his first race aboard 999*



If the car went over a bump or turned a corner something gave, but surprisingly enough it was very seldom a part of the drive train. When the red car met an irregularity in the road, it usually took off through the air; the lack of differential action on the rear wheels created a chronic case of skids.

Ford made doubly sure of having a good solid ride by lining the two-by-four white-ash frame with boiler plate. Crossbars of the same composition were liberally added at random. The water supply was located under the driver's seat—undoubtedly one of the reasons why the cooling system underwent three major changes during the car's lifetime. The original radiator, supplied by a gear-driven water pump, consisted of 64 three-quarter inch brass pipes mounted one above the other; when this was found to be inadequate (mainly because of the lack of radiating ribs), more pipes were added until a very Rolls-Royce-like appearance was achieved. The cooling effect was not Rolls-Royce-like, however, so the beehive structure that is now on the car was installed. This design, plus adequate ventilation, kept the seat of the driver's pants from becoming too warm, and was the radiator used during most of the car's summer weather racing career. In the winter, the remote location of the water tank and the chill Michigan climate combined to form ice cubes in the cooling system. To solve this problem, Ford provided a cold weather water tank. It was a bullet-shaped affair that sat on top of the engine like a large present-day hood ornament.

The gas tank was mounted on the left of the engine, and was connected by a 2¼-inch supply line to that granddaddy of the carburetor, the mixing valve. An engine-driven fuel pump failed to supply enough fuel to fill this sewer-sized pipe; consequently the two cars spent their first few months of life snorting and lurching, but never running. Henry Ford was unable to solve the problem, and in disgust, sold his interest in both racers to Cooper for \$350, with the stipulation that the Ford name was not to be associated with either.

The solution to this problem in fuel logistics was provided by a young man named Barney Eli Oldfield. Except for a local reputation for being a speed demon on a bicycle, Barney was completely unknown when he first joined Cooper. But one day shortly after Ford had withdrawn, Oldfield sat near the gas tank and blew in it while Cooper manned the crank. The once-reluctant engine kicked off with a roar that could be heard for

blocks, and continued to roar until America's first pressurized fuel system ran out of breath. It was not much of a trick to duplicate this mechanically, and from then on in, records started to fall.

Ford must have heard the noise because his name began cropping up once again in contemporary news articles about the car. Cooper's role was mainly that of the well-heeled sportsman, and he must have been one of those rare persons who saw to it that credit was given to whom it was due. At any rate, the wayward Henry was welcomed back into the fold and both men pondered the problem of how to drive the car, now that they had the engine running.

Directional control of a sort was to be accomplished by the type of tiller still seen on steam rollers. A 28-inch horizontal wooden bar was centrally mounted on a vertical post and fitted with a handle at either end. Ford and Cooper found they lacked the strength to insure successful negotiation of corners, so both men eyed their strapping handyman, Barney Oldfield, and decided that his racing career was about to begin.

With a minimum of verbal instruction and no practice whatsoever in this or any other car, the young man who had never driven before in his life climbed aboard the red racer at the old Grosse Pointe Blue Ribbon track, and competing against five other cars, left them in the dust of a world's record five miles in five minutes and 28 seconds. Oldfield could have done better had he not insisted upon skidding around the outside of the turns, but at that, he finished a half-mile ahead of his nearest rival, won \$250, and was carried off the track on the shoulders of none other than Henry Ford. Some say it was at this moment, on December 1, 1902, that Ford really decided to start building automobiles.

During this race, Barney unofficially clocked 1:01.2 for the mile, nosing out Winton's Bullet, which three months before had chugged a measured mile around Cleveland's Glenville track in 1:02.25. Cannon's steam racer was way behind, requiring 1:05.25 to puff the same distance. Cannon was out of the running on another count, too, for the recently organized American Automobile Association disqualified the steamer on the grounds that two men were required to operate it. This was drawing the line where it hurt, for all the contemporary gasoline cars carried "mechanicians," who were absolutely essential if the owner expected to cross the finish line. Through the designer's pride, not lack of foresight, proper accommodation for these assistant drivers was never provided. They were picked for their jockey-like physique as well as mechanical ability, and had to be untainted by any desire to live to a ripe old age. Oldfield usually carried along a 100-pounder named "Spider" Huff who, while oiling bearings, making adjustments and otherwise ministering to the needs of his steed during the race, clung like his namesake to whatever surface was available.

For the next two years the car raced under the Cooper banner with Barney Oldfield usually at its helm. The red car, the man who drove it, and the man who made it were fast becoming as well known in the American household as Lydia Pinkham. Oldfield, a spectacular driver who kept track owners busy repairing the guard rails, had as his chief competitors Wridgeway on a Peerless, Fosdick on the Winton, Carl Fisher on a Mohawk, Schmidt on a Packard, and Walt Baker on his "Torpedo Kid."

Not to be outdone by the publicity-conscious Baker, Oldfield dubbed his car "999." A well-chosen title, it was linked with the feats of the record-holding New York Central locomotive, and stuck in the public's mind. Privately, Barney referred to 999 by the generous (but not entirely warranted) nickname, "Old Faithful."

Most of us can point to a day in our lives which we remember more clearly than any other. For a fortunate few, this day is one of success—some crowning achievement. If cars had memories—and some people believe they do—an elderly red auto now living in retirement in Dearborn would remember January 12, 1904, as the apex of its career. On that cold winter morning

(Continued on page 72)



Oldfield's brawn behind the tiller guided 999 to many laurels

**W**INTER IS JUST around the corner—let us winterize your car!”

Did these signs on your neighborhood gas station bring you up with a start this year? Were you still thinking back to that pleasant August vacation trip in the mountains? Can you imagine plowing through the snowdrifts that will soon cover those woodland glens? Does entering your stock car in a race on the offshore ice of Lake Michigan seem somewhat futile, in terms of speed and control? What about that vacation trip through the Rockies—would you be game to repeat it in January? No, MOTOR TREND has not gone in for fantasy. In Scandinavia, feats like this are commonplace—not because drivers in the Northland are more daring or foolhardy than others, but because they must drive where they live. Fortunately, their cars are designed to withstand the rigors of winter driving.

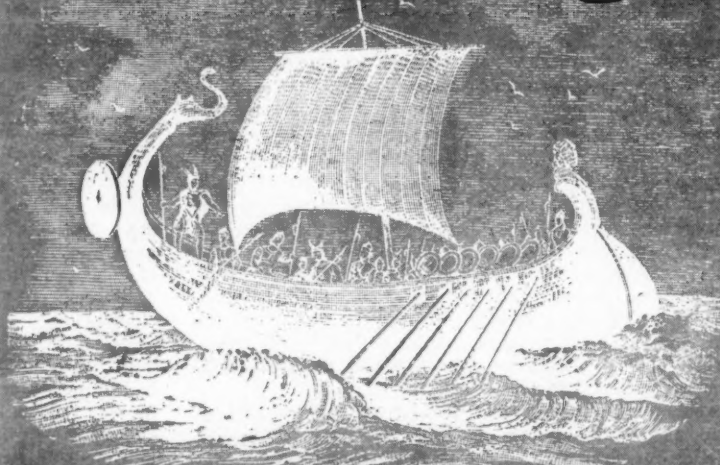
In Scandinavia's many winter road races (which start in November and December, and continue as long as there is snow on the ground) Swedish-built cars nearly always finish in the first positions because of their superb balance and roadability on ice and snow. In the Radio-Loppet race, contestants receive their instructions via the state radio. The course goes from glazed highways deep into snowy forests through car-wrecking timber trails at speeds over 60 mph. The grueling day-and-night Rikspokalen is held on highways-turned-skating rink, and other races are run on frozen lakes. The Swedes consider their Winter Grand Prix a sort of Indianapolis classic on ice. The cars reach unbelievable speeds on turns because of their special tires with three rows of steel spikes embedded in the treads. The Midnight Sun Rally, the only great summer event, taxes the stamina of hundreds of drivers and cars by routing the entrants far above the Arctic Circle during its 2200 miles.

Heavy, soft-sprung imported cars offer little competition to the smaller European cars during the snowy Scandinavian racing season. Consistent first-place cars are the Swedish-made Volvo and Saab. They also provide dependable, year-round transportation for the average citizen, because they are built for Nordic needs.

The Saab, introduced in 1949, is built by an aircraft company, the Svenska Aeroplan AB. A 46.6-cubic inch, two-stroke engine powers the front-drive, four-passenger sedan. The two-cylinder

Thirty-four

## SCANDINAVIA and the auto age



DESCENDANTS OF THE VIKINGS  
HOLD THEIR GREATEST RACES  
IN THE WINTER—ON ICE

BY SVEND AAGE NIELSEN

powerplant puts out 25 bhp. Mounted on a 97-inch wheelbase, the Saab weighs 1680 pounds.

The more powerful Volvo, a five-passenger, two-door sedan, has an 86.6-cubic inch engine. Its four-cylinder ohv powerplant is rated at 43 bhp. The Volvo, a favorite for winter racing, weighs slightly over 2000 pounds, and is five inches longer than the Saab.

Swedish manufacturers cannot keep pace with the great demand for these cars. Saab builds mostly airliners, jet bombers, and fighter planes. The Volvo plant's output is mostly high-quality busses and trucks, and automobile output is limited to about 250 passenger cars a week. A third major Swedish plant, Scania-Vabis, builds large busses.

There are two major reasons for

Scandinavia's automotive craving—population and topography. Norway, for instance, has three and one-half million people: a small number compared to many countries, but certainly high enough to absorb each unit coming off Sweden's automobile production lines. Danes number over four million, and Sweden, the only country producing automobiles in Scandinavia, must cater to the needs of its own seven million inhabitants.

Transportation figures show the popularity of motoring in Scandinavia, but they don't reveal *why* motor vehicles have become a major carrier. The Swedish Bureau of Statistics says the automobile accounted for more than 50 per cent of Sweden's 1952 transportation. Trucks carried 72 per cent of the transported

Motor Trend

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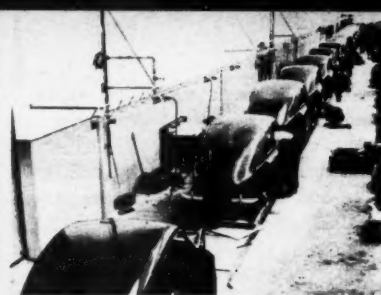


*The author, Svend Aage Nielsen, checks maps, compass and watch during a midwinter rally stopover. His car, a PV-44 Volvo, is built for cold climates*

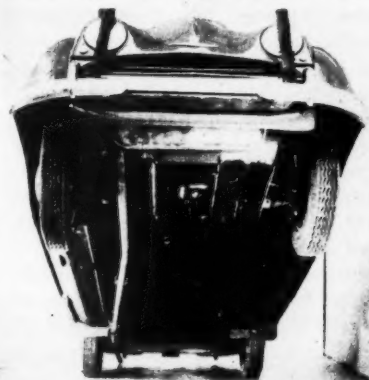
goods, railroads hauled 18 per cent, and boats carried 10 per cent. Few countries can show transportation figures that favor motoring to that extent. A topographic map will show you why.

In Denmark, the numerous excellent roads are said to have created motordom, while in Sweden and Norway, the auto age created the roads. Sweden and Norway are two of the world's longest countries, measured from north to south. In Norway, which is nearly 900 miles longer than California, the railroads run about halfway up through the country; then the many fjords (which jut in from the sea like the teeth of a comb) put a stop to further rail-building. At the end of the rails, ships take the bulk

of goods and passenger traffic. The coastal boats run deep into the fjords, and at their limits, cars, trucks, and busses go into the mountainous interior. Since the war, and without any fanfare, Norway has finished one of the world's most spectacular roads. Running from Oslo to Northcape (from the Kattegat to the Arctic Sea) the road was a tremendous project for a small country like Norway to undertake. Because of the mountains and the woods in Norway and Sweden, it is simply sound reasoning to let automobiles handle interior traffic. Motoring is a necessity that Nature forced upon Norway and Sweden. Both countries have taken advantage of modern road transportation, and now even the most



*Swedish aircraft plant builds a limited number of Saabs as a production sideline*



*Close-up of a wind-up toy car? No, it's just the trim, enclosed bottom of a Saab*



*Stowed neatly under a forward-opening hood, Saab engine drives front wheels*

remote sections, long buried in the cold of winter, flourish as industrial centers. Sweden has become so industrialized that it is now the world's third-greatest oil consumer. Its 46.5-gallon per capita consumption is the largest in Europe.

Denmark's gently rolling countryside does not demand road transportation, but the dense population (240 people per square mile) has made motoring popular. Perfect roads serve the needs of industry and agriculture; a system of high-speed bus lines somewhat lessens the need for private cars.

A recent survey showed that Sweden led the Scandinavian countries with 321,000 cars, 7800 busses, 90,000 trucks, and 259,000 motorcycles (Sweden pro-



duces five different makes of motorcycles, which play an important part in Scandinavian transportation). Norway is credited with 55,000 cars, 45,000 trucks, and 4000 taxicabs. Busses number 4000, and the country has 22,000 motorcycles. Denmark has 112,000 cars, 59,000 trucks, and 9000 busses and taxis.

Since the second World War, Sweden has progressed far beyond other Scandinavian countries in motorized transportation. Norway and Denmark were Nazi-occupied during the war; export was nil, and importing of cars was equally non-existent. Besides being looted by the enemy, hundreds of Danish and Norwegian factories were blown up by saboteurs working for the underground; among the larger factories destroyed were the great assembly plants of GM, Ford, and Citroen.

Because of present low automobile output, Sweden's unbalanced supply and demand situation (and its effect on the consumer) is like the U.S. market at the close of World War II. The scarcity of new cars puts used cars at a premium. Because the two new cars that suit North Country needs are produced in Sweden (and because many imported cars are assembled there) the problem is not as acute as in the neighbor countries. In Denmark, for instance, an average car will be at least 15 years old; in Norway, the average age drops to 13 years, and in Sweden, the average car is six to eight years old. The car shortage in Denmark has brought about a high-priced used-car market. Cars brought into that country in 1939 (the last before the war) are selling at the same price today as when they were new. A recent phenomenon in Denmark is the so-called "gift car." Danes with friends in the U.S. have been able to bring in about 2000 cars since the war, but the state has confiscated more than 300 of them because many of the "friends" were non-existent.

In Sweden, American cars are too few to meet the demand, and three- or four-year-old cars bring their owners the same price they paid for them in 1949. Convertibles bring a top price, for few are permitted into Sweden. A new American car is much more expensive in Sweden than it is in the U.S. The Swede must pay a 15 per cent customs duty, 10 per cent import tax, and of course freight from Detroit to Stockholm.

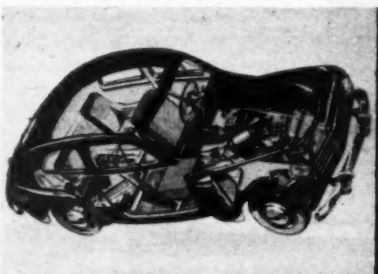
A Swedish crown is worth a little less than 20 cents in American money (a \$2000 car would be worth 10,000 crowns). A Swedish white-collar worker (such as a bank clerk) earns about 500 crowns a month, or \$100. Here is



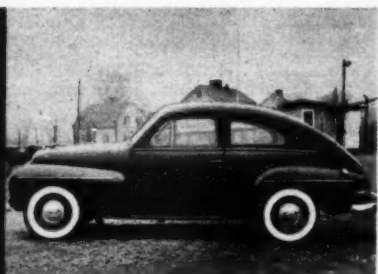
*Saab styling utilizes almost-frenched headlights, fender moldings, little chrome*



*Saab can be identified by two-piece rear bumper. Deluxe model has more chrome*



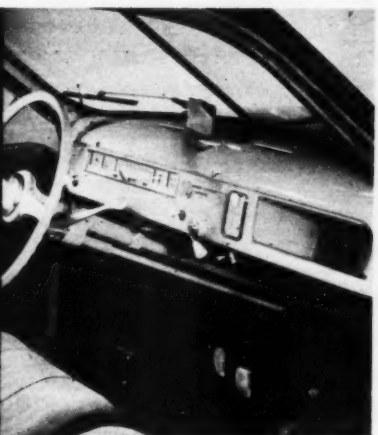
*The one-ton Volvo has four-wheel coil spring suspension, 104-inch wheelbase*



*More Americanized in design, the Volvo gains length from striping, flat back*



*Unlike many European cars, Volvo sports colorful upholstery, well-chromed panel*



*Driveshaft hump is missing from Saab's interior; pedals are near center of floor*

what he must pay for the \$2000 imported car: first, 10,000 crowns for the initial cost; next, an import duty of 2000 crowns, an import tax of 1500 crowns, and the transportation fee of 1500 crowns. So far the car costs 15,000 crowns, or \$3000, and the dealer has yet to add his profit.

By comparison, the official price of a Swedish-built car is about 8000 crowns (\$1600); but the home-grown automobile is in such fantastic demand that buyers are willing to pay 10,000 crowns for it, or \$400 over list price. The bank clerk stands a good chance of receiving his Saab or Volvo between six and 12

months after placing his order. Americans will remember the postwar practice of buying a new car and selling it the same day for a good profit; the same situation exists today in Sweden, and to discourage those who would buy a car not for need, but for profit, a "do not sell for one year" clause is inserted into the buyer's contract.

Regardless of the price of imported cars, and their faults (as compared with the Saab and Volvo — the cars designed with winter in mind) Scandinavians want transportation, and to get it, they accept the imports. In 1951, Sweden imported some (Continued on page 93)

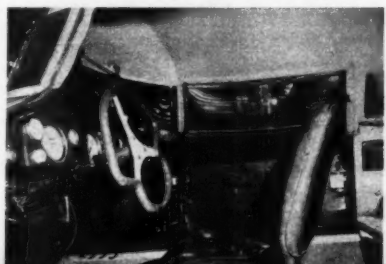
Born of a Messerschmitt wind tunnel, the Adler first appeared in plain aluminum

# THE EAGLE FLIES AGAIN

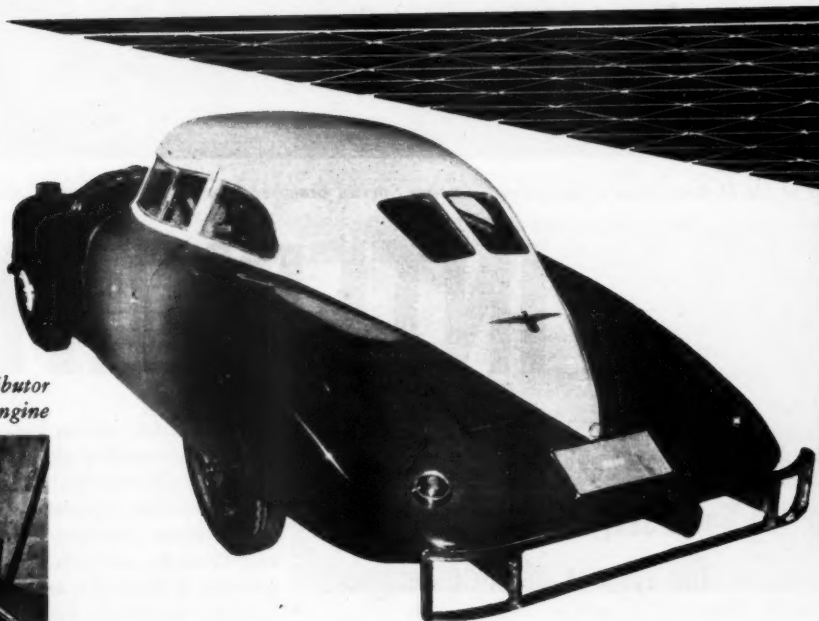
Joe Gertler checks the Bosch distributor on the four-cylinder, 105 bhp engine



Looking rather like an airplane in design, the Adler's cockpit shows experimentation in windshield, steering wheel, seats



A PHOTO STORY BY FRED HORSLEY



**E**ARLY ADLER automobiles were popular and unpretentious. Then from a wind tunnel at the Messerschmitt plant there emerged an unpainted aluminum coupe, aerodynamically correct, and not unlike a fighter plane in appearance. This was the 1939 Adler sports car, which, with a running mate, captured a one-two win at Le Mans, and later that year averaged 108 mph for 24 hours and 122 mph for one hour. This marvelous performance was obtained with a four-cylinder, 98-cubic inch engine which drove the front wheels of the 1500-pound car. The Adler — or Eagle — was built to establish Germany as invincible in automobile racing.

Of the two aluminum-bodied Adlers, only one survived Allied bombings. Now owned by Joe Gertler of the Bronx, N. Y., this car has been restored as closely as possible to its original appearance.

After reviewing the Adler's past, many people feel that there's something missing in today's sports car events, and ask, "Why don't they build another Adler?" It's a question that must remain unanswered, for there is no indication that the Adler factory (now engaged in making automotive parts) will ever hatch another Eagle.

See Dream Cars, Trend Book No. 107, now on the newsstands, for many other unusual and little-known cars. — Editor



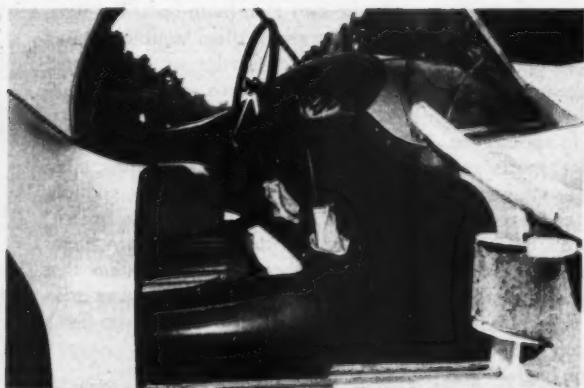
PHOTOS BY WILLIAM D. DAILEY

*Airscoop of Dr. Robert Swan's pale green Glasspar Special breathes in a snoutful of cool Pacific air from Golden Gate Park*

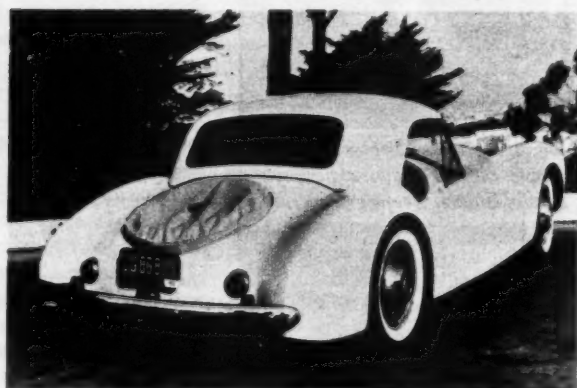
# INTERNATIONAL

**From the Great Lakes to the Pacific to  
the North Sea, Fiberglas has become  
the favorite of these designers**

**F**IBERGLAS, until so few months ago big news merely because it existed at all, has now obviously made the grade. On these pages MOTOR TREND brings you the latest designs in this versatile material. Even if you didn't know that Dr. Robert Swan had been a Jaguar owner, the Cadillac-powered Glasspar car of this Sacramento (Calif.) dentist would give you a hint. This ice-green powerhouse, complete with Polaroid windshield, has one of the first Glasspar roofs. It's removable in seven minutes with a screwdriver.



*Rolled and pleated green and white plastic upholstery, carpeted hinges, shrouded levers add pleasure to driving*  
*Thirty-eight*



*Pontiac taillights give efficient warning without being obtrusive. Casual tire cover enhances perfection of the body*

*Motor Trend*

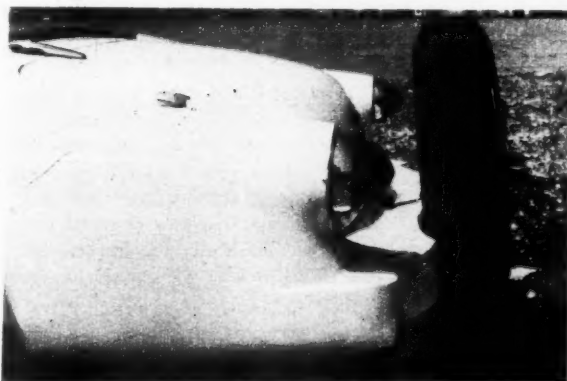




*Detroit, brainchild of industrial designer Ray Russell, uses as many stock Ford parts as possible for easy maintenance*

# SUCCESS

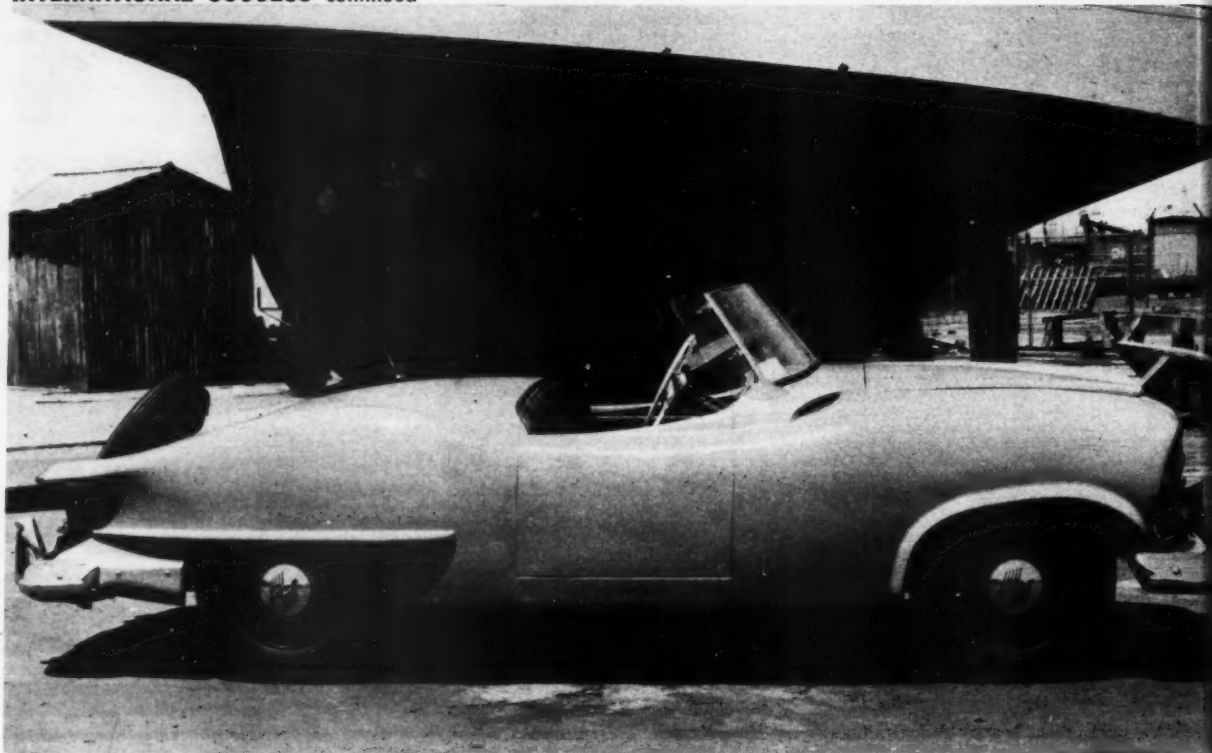
**T**HE DETROITER, newest baby of the Detroit Accessories Co. of St. Clair Shores, Mich., is a fairly conservative car. Ray Russell, its designer, planned it "to stay in style for a number of years." Though the pilot model shown here was built on a specially shortened Cadillac chassis, production bodies will be primarily for '52-'53 Ford chassis, which they will fit with no tailoring. Furthermore, an astonishing number of standard Ford parts (glass, windshield frame, dash panel, floor mats, etc.) are used in the car.



*This sporty car has many stock-model amenities unusual in dashing jobs, such as roomy deck. Tire mount is ingenious*



*Detroit clearly shows its Ford family origins in this side pose against Lake St. Clair. It's seven inches lower than stock*



*During the week, William Commons designs boats like this \$75,000 schooner. After hours, he built his golden Fiberglas car*

ON LOS ANGELES' Terminal Island there works a British-born naval architect named William Commons. Like all yacht builders, Commons is made acutely uncomfortable by any stray inch of space that doesn't give a good account of itself. Consequently, his plastic car converts to a traveling double bed with as little fuss as any car, plastic or metal, that we've seen. Commons has spent his life beside the sea; our guess is that the efficient forms of adjacent marine life in-

fluenced him considerably in the sculpturing of his roadster.

Wood is a time-honored material for building boats, and its role is not neglected even here. More than six months of Commons' time went into spruce wood body molds. He claims that his pattern is much more flexible than plaster, since it lends itself easily to any design changes. Beneath the novel body is a stock 1951 Ford V-8 chassis. Wire wheel covers complete the light effect.

—Lester Nehamkin



*Cockpit is elegantly restrained, with natural tan leather, dusty gold carpeting, metallic gray dash, white wheel*

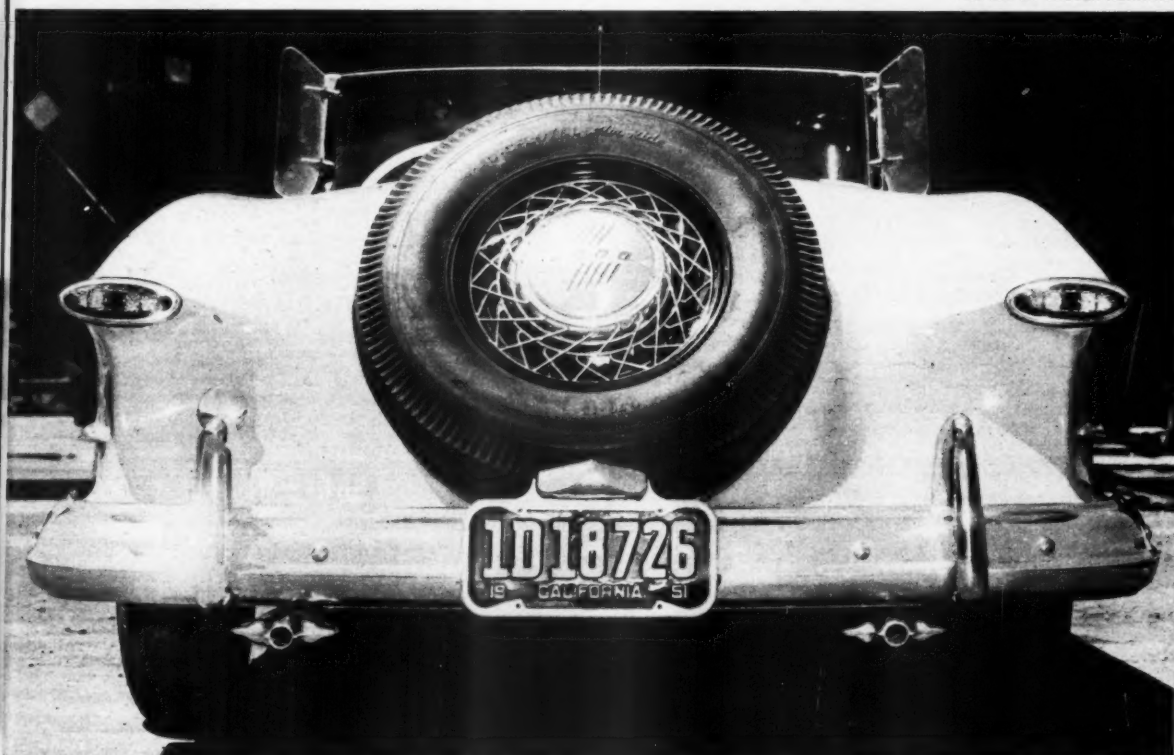


*Designer-builder Commons demonstrates the roomy sleeping space below decks. Seatback goes inside for padding*



*Shark-like front end, though open to question esthetically, does its job. Small holes in wood-lined scoop keep out rain*

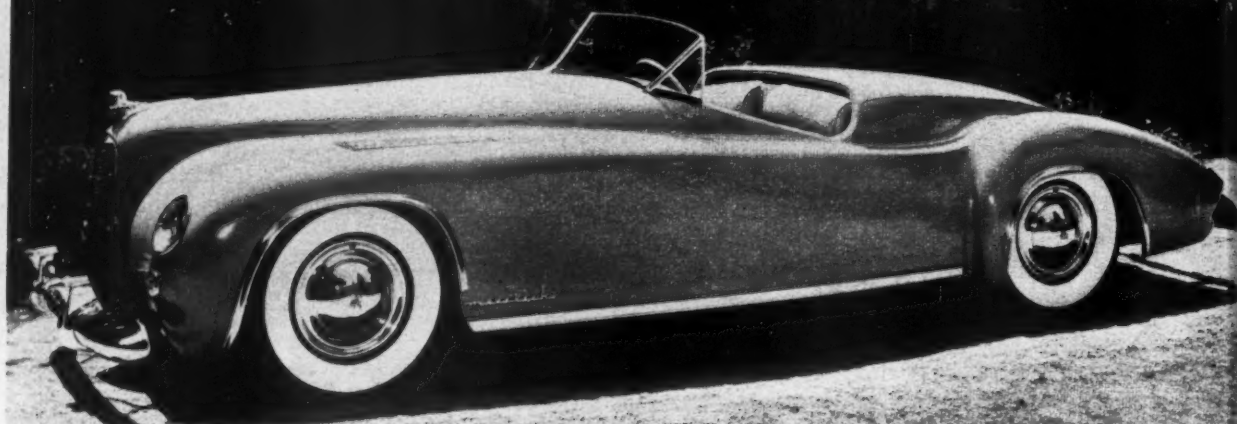
PHOTOS BY LESTER NEHAMKIN



*Spare tire rides out in back, not so much for effect as to leave room inside for two campers. Aerial is atop deck*



# INTERNATIONAL SUCCESS continued



*Raiber like a latter-day Stutz or Leland Lincoln, the Maverick gives an impression of power that can't be denied*

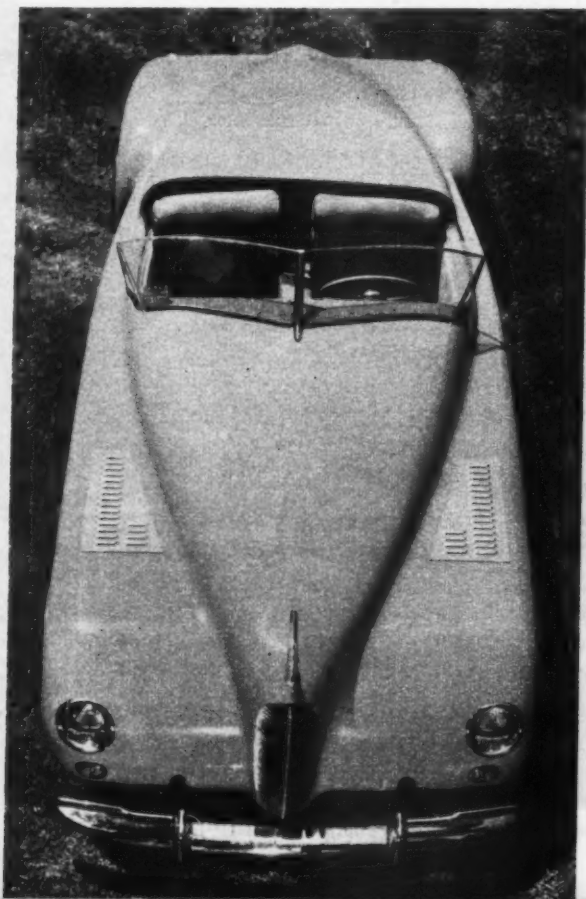
**I**MPRESSIVE IS THE WORD for the long, boat-tailed monster known as the Maverick. Presumably the name refers to "an independent individual" rather than the dictionary's first listing ("an unmarked calf"). Be that as it may, the car shown is Number One of the Los Altos (Calif.) cars, and its awkward features, by and large, are scheduled for discontinuance in production models. The standard cars will have

hoods; doors and rear decks will be available to those who want them. A top will open from either side.

However distinguished certain components of different cars may be, they seem to take on a sort of Irish stew effect when they are all used at once. The Maverick's La Salle grille is beautiful; so are its Lincoln lights. Together, they detract from its sweeping lines.

—Pete Molson

PHOTOS BY ROBERT COX



*Above, boat-tailed rear end, arresting as it may be, seems rather passé for 1933. Later cars will come with deck lids*

*Center arm rest, thin-framed windshield, enormous expanse of fenders and hood complete the traditional luxury look*

Motor Trend

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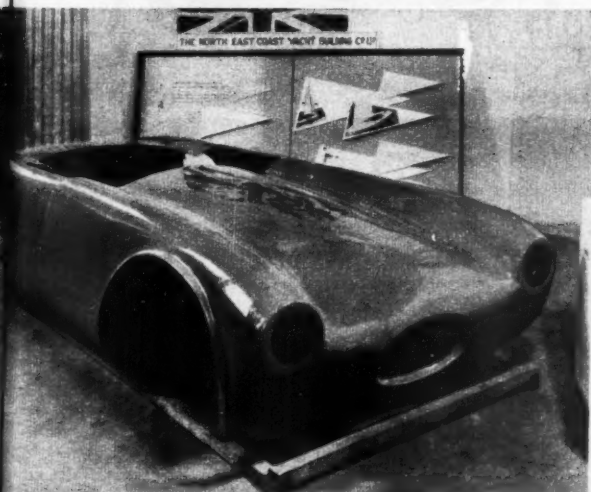


*Hellings Victress, though American, has two features of English sports cars: short length and swooping fender curves*

**F**IND YOURSELF A CHASSIS with 102-inch wheelbase and you're all set to add a Hellings Victress body (above) and build yourself a sports car. The body shell comes with hood and deck panel for \$570; add \$25 each for doors. No hardware is included. Parts require attention with a rotary saw or hacksaw plus some sanding. Metal angles, bonded into the Fiberglas, attach the body to the frame. The Victress re-

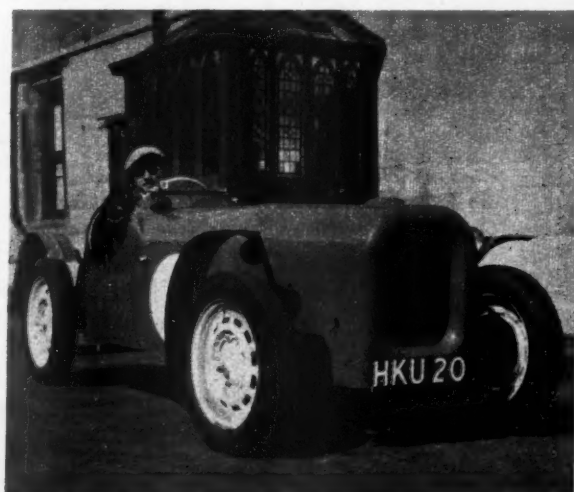
presents a most important approach to the would-be sports car owner. The North Hollywood (Calif.) company's contention that "a satisfactory chassis of around 1940 vintage can be purchased for about \$100" can be proved by any zealous habitué of used car and junk lots. Second all-important factor for those enthusiasts with wives is that rugs will be safe from wet plaster.

— Pete Molson



*You send the dimensions of your chassis along when ordering this British body. Wheelbase can be 90 to 108 inches*

**T**HE BRITISH, who produced their first Fiberglas car in the boxy form at right above (W. D. Binns built it on a Mark V Buckler chassis) have come up with something of a dreamboat in the R.G.S. (left). The North East Coast Yacht Building and Engineering Company, Ltd., at Blyth on the North Sea, molded it for ex-Army Major Dick Shattock. Among its features is that especially endearing European quality of custom dimensions to suit the owner's whim. If your



*Weird little Buckler with first Anglican Fiberglas body deserves praise rather than a laugh: it led to car at left*

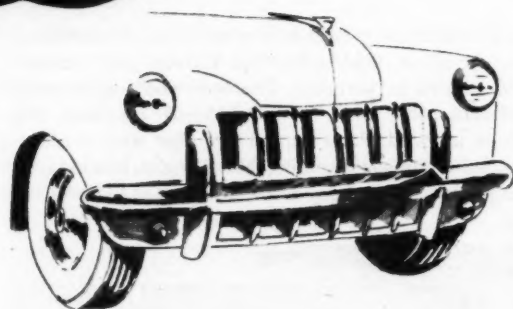
sports chassis has a wheelbase from 90 to 108 inches and a tread of 48 to 54 inches, you're all set; the cowl does have to be somewhere near 33 inches. Variations in length and width are taken up by the Fiberglas hood, which hinges to the frame at the front. The other main panel hinges at the extreme rear and swings up (carrying the floor panels with it) to reveal the fuel tank, batteries, etc. Average weight of R.G.S. bodies is under 90 pounds.

— W. Boddy

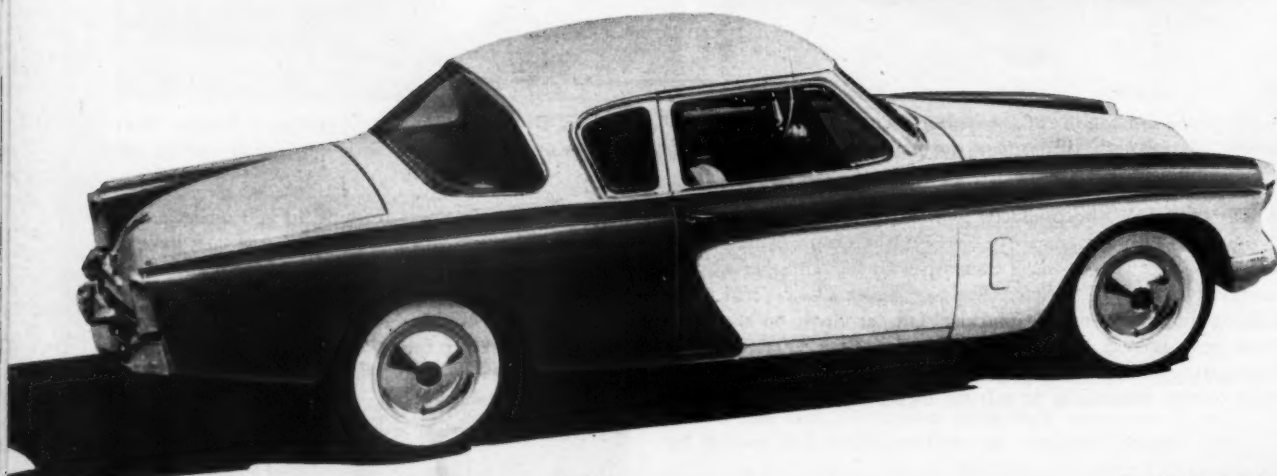
**Your family car isn't  
such a far cry from  
these foreign beauties**



*This Cisitalia has a message for your Chrysler.  
Make it look lower with a slim bumper, tall  
guards made from another, and simpler grille*



*Paint inspired by a Vignale-bodied Cunningham  
can make your Studebaker even longer looking.  
Or try a removable roof over your front seat*





# CUSTOMIZING

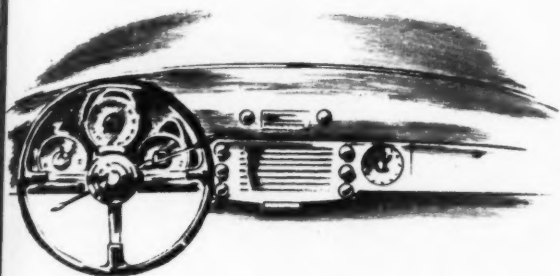
## IDEAS FROM EUROPE

Photos by Bill Harkins

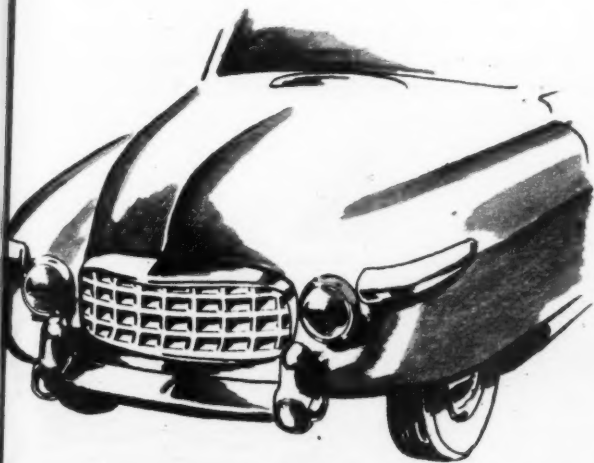
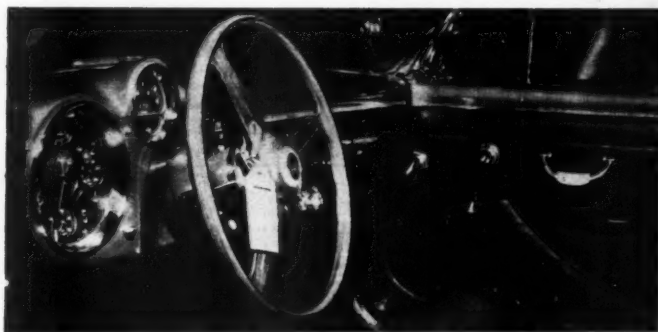
Custom sketches by Don Fell

WHEN MOTOR TREND's Eastern Editor Fred Horsley and photographer Bill Harkins get together with a group of unusual automobiles, the invariable result is a flood of detailed prose and handsome photographs in our Hollywood offices. Herb Shriner's International Motor Sports Show was no exception: our only problem was the too-familiar one of finding space to show you all the alluring Continental creations. Then we thought up something new. (It was

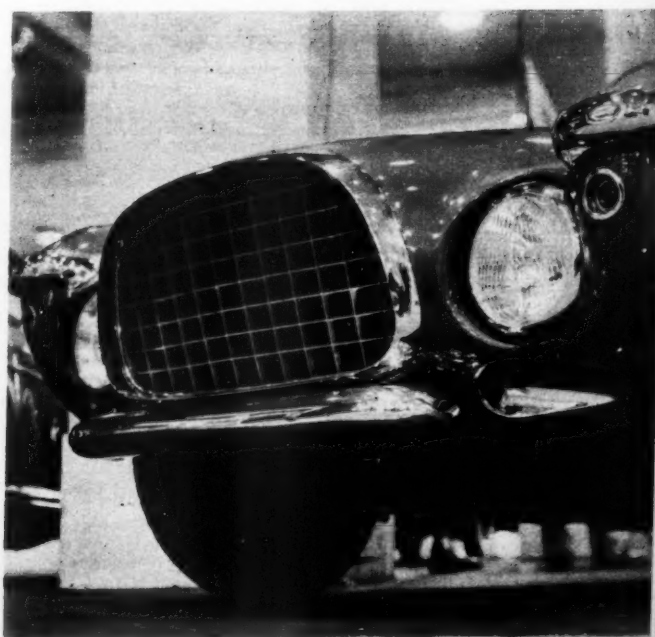
getting late in the afternoon, anyway, and it was easy to slip into the realm of fantasy.) We said to ourselves, "What if Americans do own comparatively prosaic Nashes instead of Ferraris, Chryslers instead of Cisitalias? Why shouldn't they try out some of the ideas formerly marked 'For playboys only'?" We know these notions are not the most practical. But we think they could add a lot of sparkle to Main Street. What do you think of our dreams on paper?



*The Cunningham's dash suggests reworking your Buick or Hudson panel with dials that are giant size, or simply a little larger than original*



*A Vignale Ferrari inspired this custom Nash. Headlights, now closer to grille, leave room for the bumper ends, newly located on fenders*

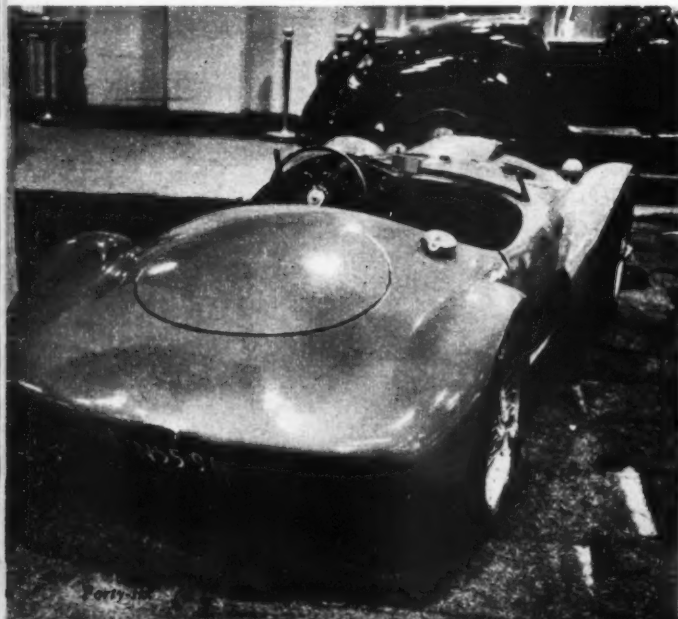




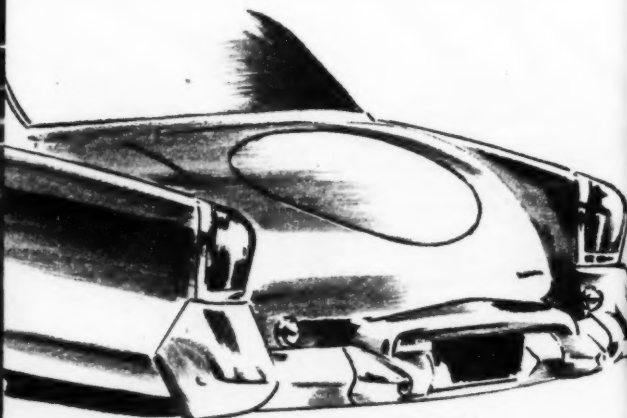
*Crimson and black Ferrari (grille on page 45) gives Ford owners a practical new rear deck line. Bumper goes at height of old taillights*

## CUSTOMIZING IDEAS FROM EUROPE

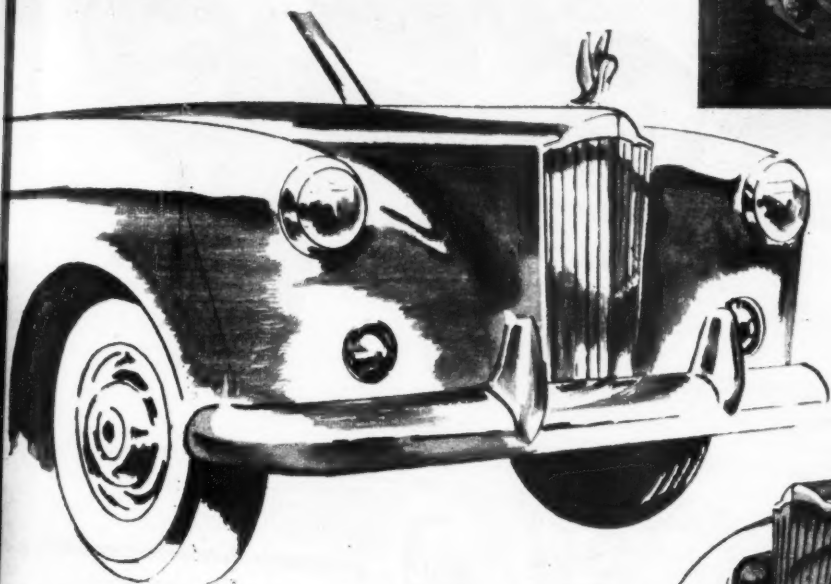
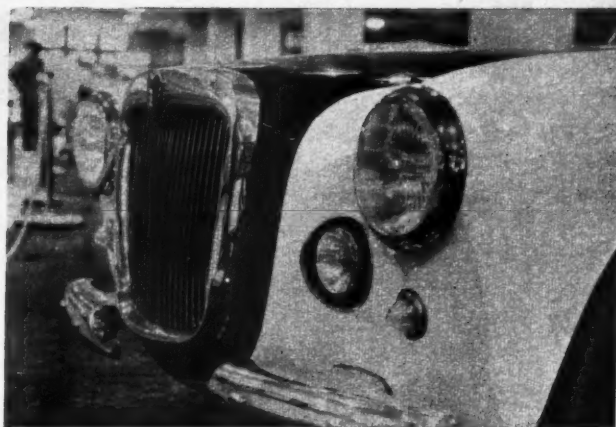
*Shark-like Bertone Siata hardly suggests modifications to recent Detroit products*



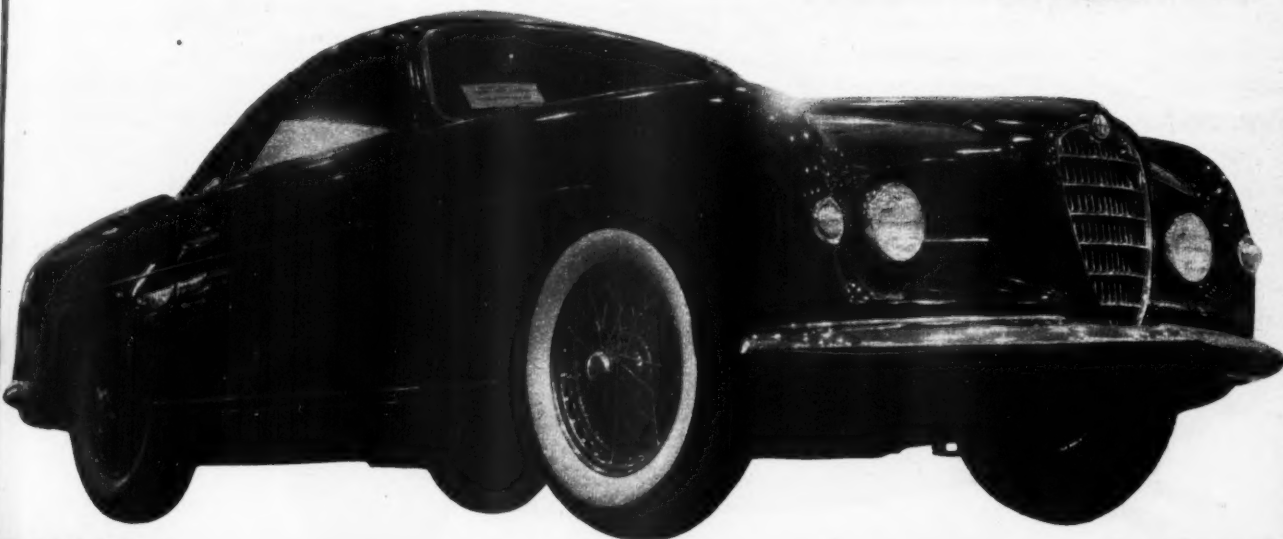
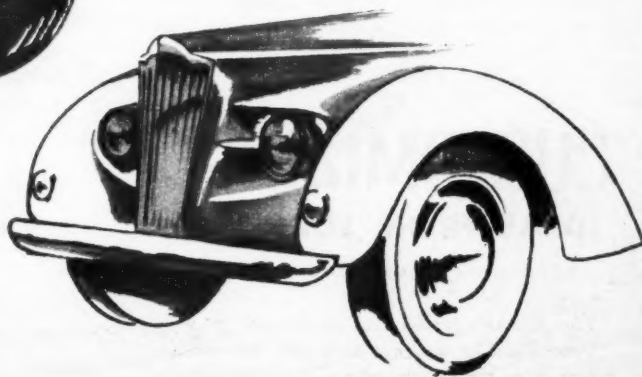
*Just as it does on the wicked Siata, the spare tire announces its location on this otherwise-stock Kaiser*



*Do you ever wish they still built classics? A Bertone Siata sedan brought to mind this new-old Packard, a late model with a 1940 grille*



*You might try the same Packard grille on a 1937 Ford. Few modifications are necessary to remind the viewer of this Alfa Romeo "1900" coupe*



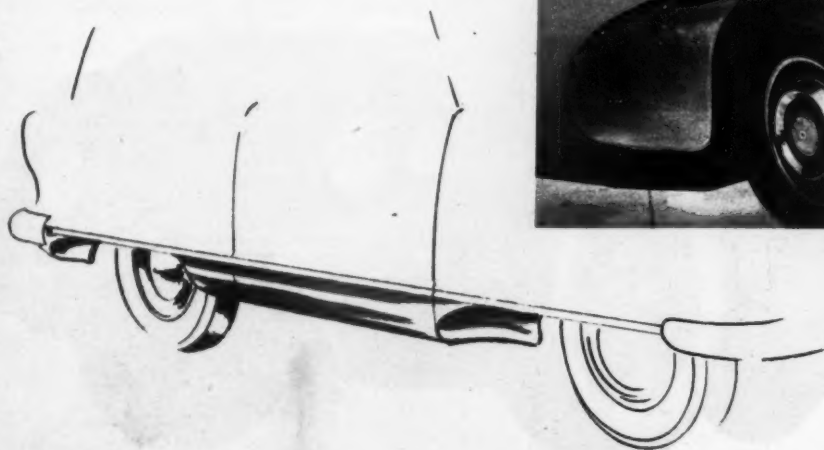


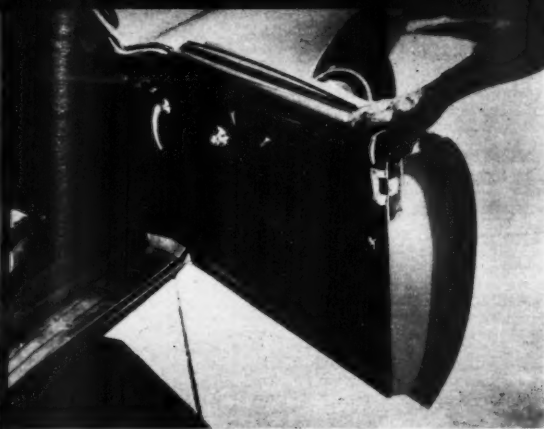


*Wildest of all cars at 1953 Michigan Motor Show was this Abarth. Drop the nose of your Stude — and the lights too, if you like — for this look*

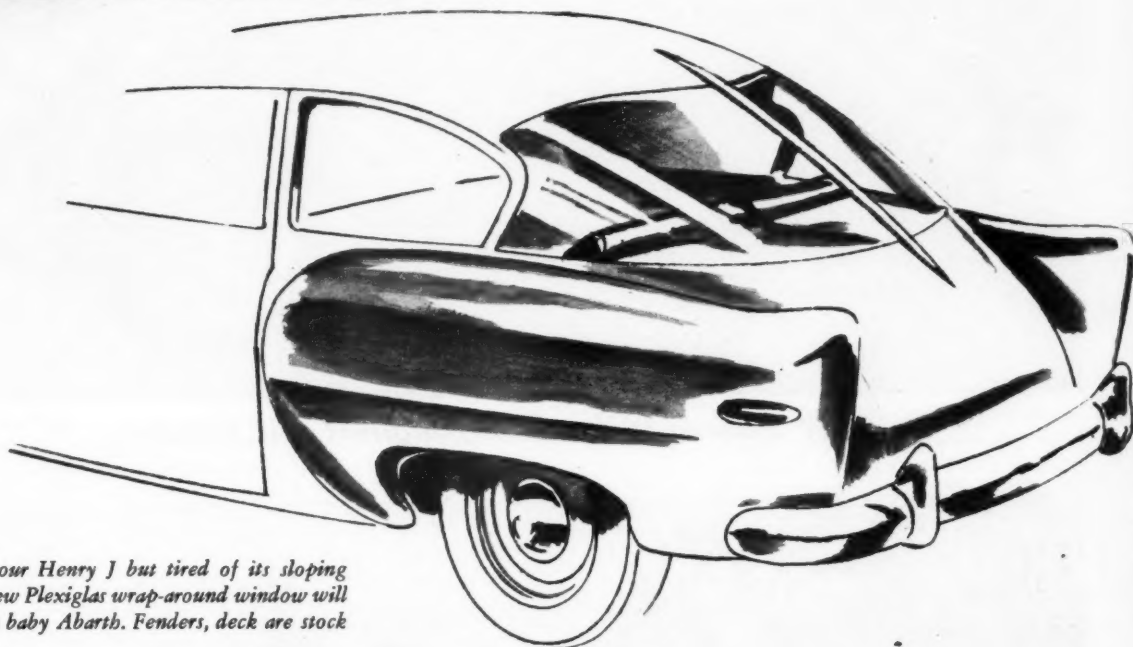
## CUSTOMIZING IDEAS FROM EUROPE

*The Abarth's fenders cut in to cool its tires. Your Rambler may not need this, but concave cutouts in contrasting color will individualize it*

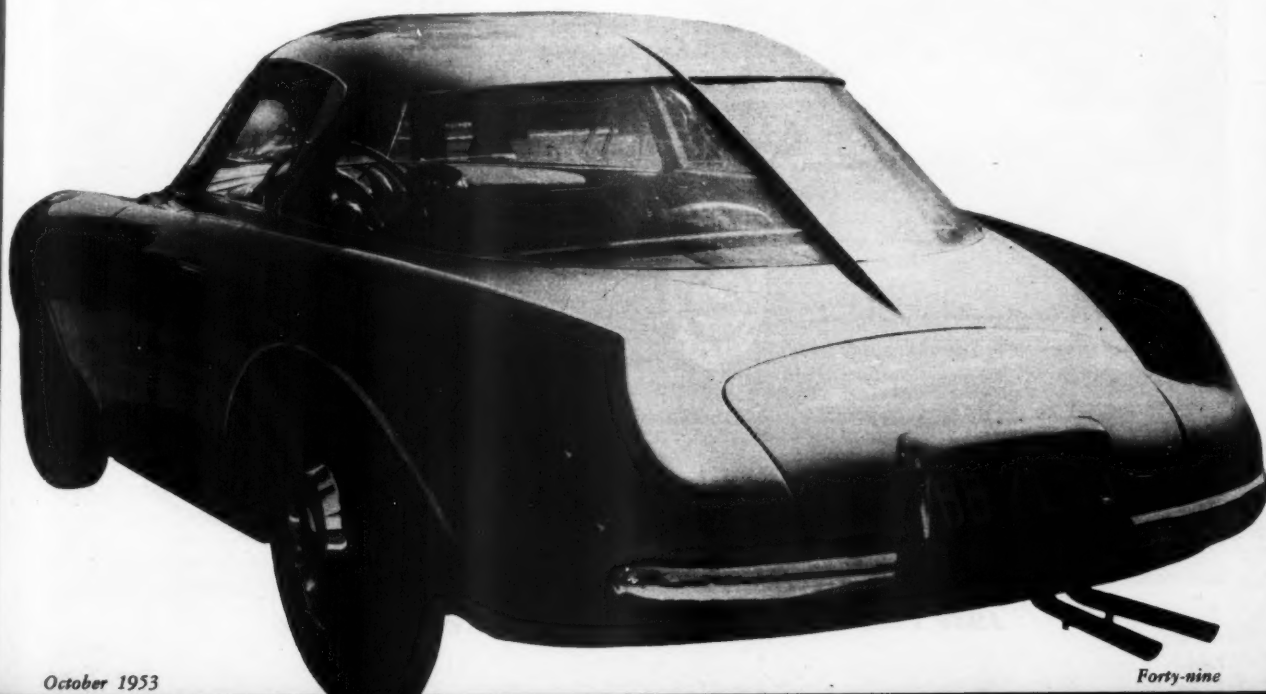


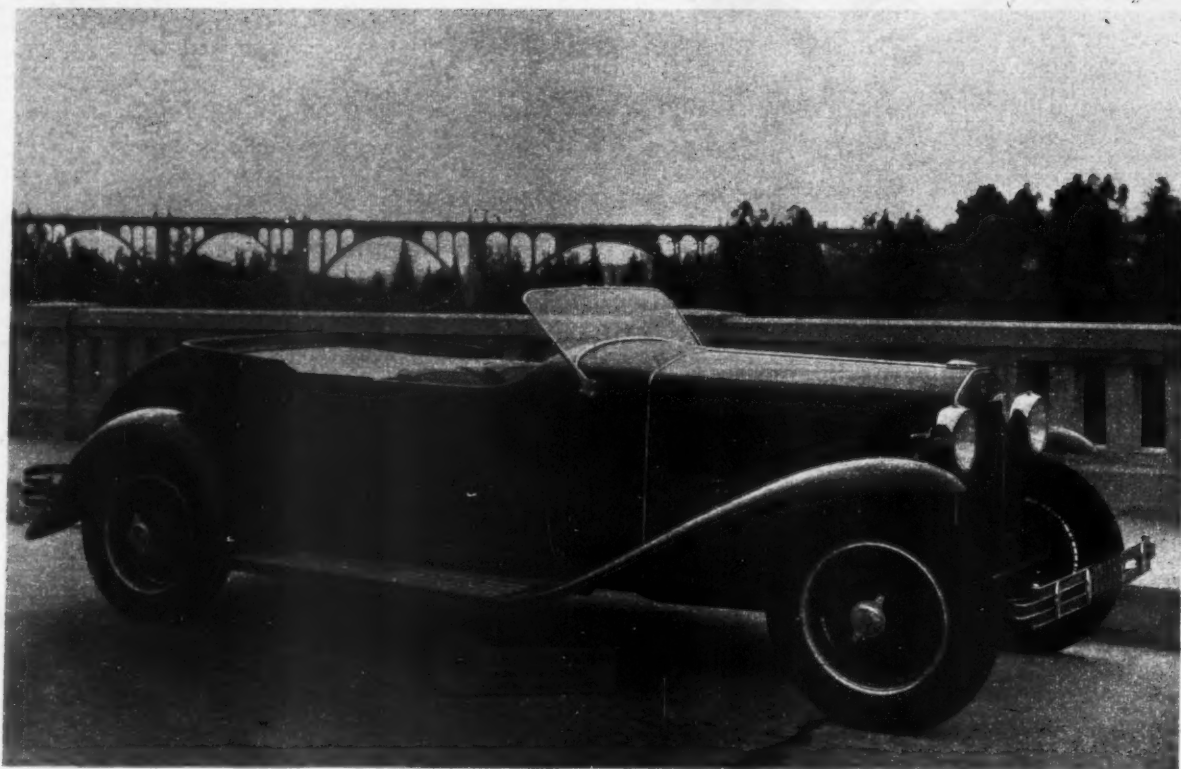


*The doors of the Abarth of course suggest a Hudson, and remind us that Hudson interiors lend themselves to special upholstery treatments*

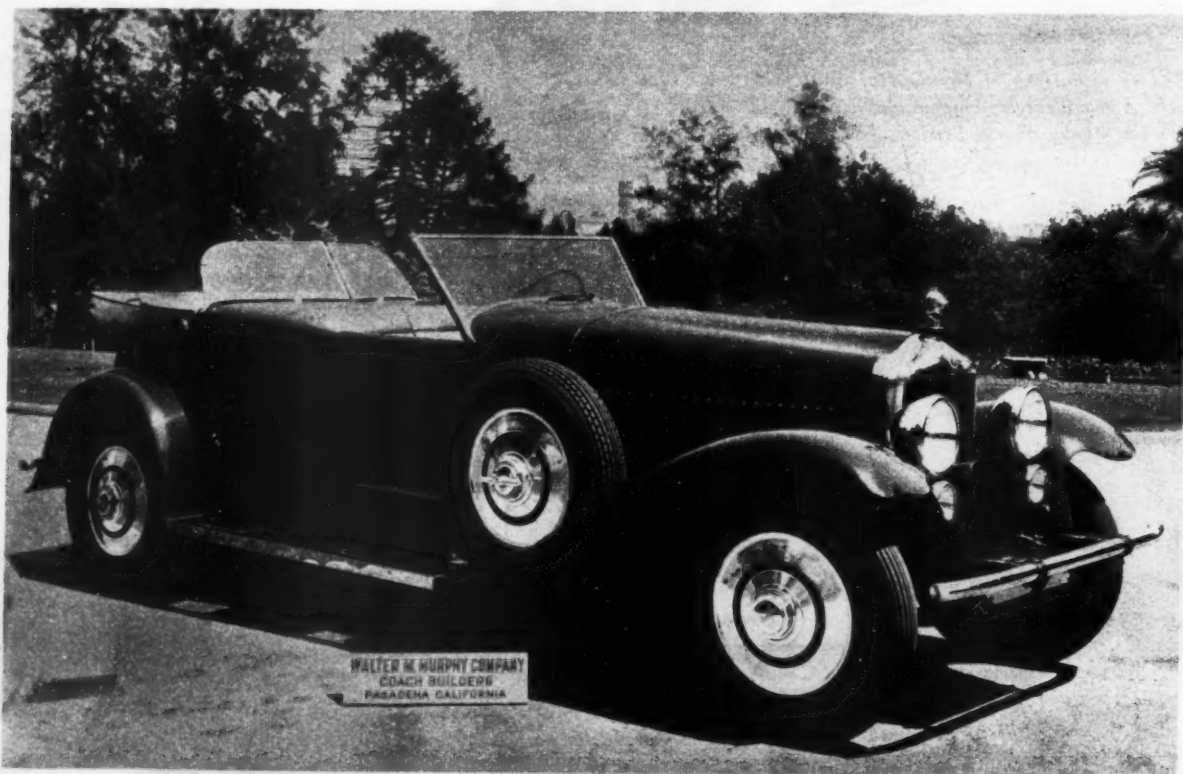


*Fond of your Henry J but tired of its sloping back? A new Plexiglas wrap-around window will give you a baby Abarth. Fenders, deck are stock*





*1930 Lancia Dilambda—original cost \$10,500*

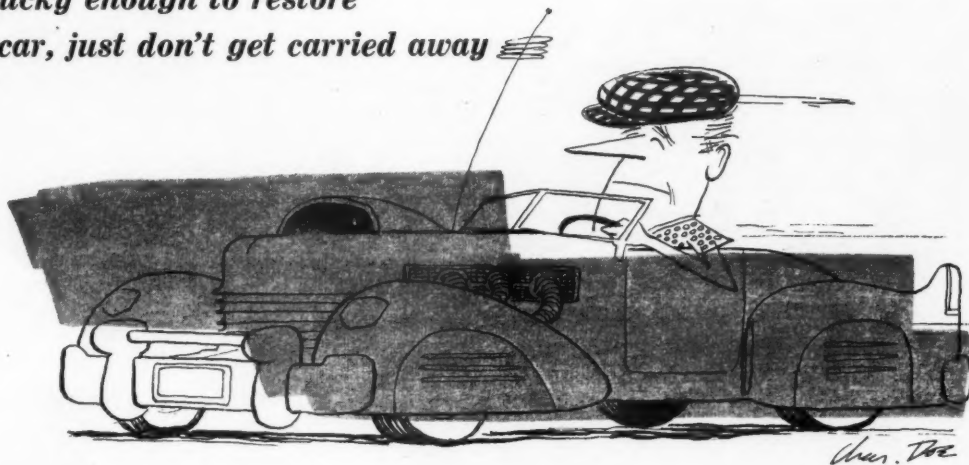


*1931 Minerva Knight—original cost \$20,000*



# DON'T BUILD AN AIRSCOOP!

*If you're lucky enough to restore a fine old car, just don't get carried away*



ONE OF THE GREATEST problems of the classic enthusiast is modification. Every day we get letters asking whether it is permissible to make various changes in classic automobiles. The answer always depends upon the change and the car.

Whether modification is slight or great has nothing to do with the case: a slight modification of one type may be forbidden; in others a major change is quite permissible.

Many classics throughout the U.S. have been modified. In certain cases the results are appalling. Locally, we have noted a Duesenberg with Chrysler fenders and a homemade boat-tailed speedster body. Then there is the beautifully restored Packard with a Duesenberg engine, the Chrysler Imperial sedan converted to a phaeton, and a Cord phaeton with rear-wheel drive through a Packard engine.

To a purist each and every change is sacrilegious. But from a practical standpoint, consider the limitations inherent in maintaining vehicles of another era. Any modification absolutely necessary to keep a classic on the road is permissible. We know of a '32 Chrysler which has had no transmission for two years. If a replacement gearbox cannot be found, it is certainly permissible to install a gearbox pirated from a different make. The car would again become operable though its value as a classic would be decreased. If an original gearbox could be found, the box from another make would be forbidden. A true purist—and, let us hope, a

By Robert J. Gottlieb

wealthy one—would pattern and manufacture exact replicas of the original equipment. Most of us can't consider that.

Modification depends greatly on the individual owner as well as on his car. Many owners modify in an attempt to improve appearance, roadability, performance, dependability and utilitarian value, each an element in the definition of a classic. The reasons that compel certain owners to improve these elements are readily apparent. Some hold that the classicism of a given vehicle remains undestroyed after slight modifications aimed at greater acceleration, top speed, or economy. Purists stoutly maintain that if a car is a true classic, its performance upon proper restoration will be satisfactory.

The dividing line between improvement and modification is often narrow; the gap between the divergent views is wide. A buffer zone does exist where exponents of each group agree. The reason is that it is absolutely impossible to get certain components, such as the obsolete tires on some cars. It becomes necessary to replace the original wheels or to cut them down so that available tires will fit. The purist retains the original wheels by cutting them down; the average collector replaces the wheels (it's cheaper).

Let's go a step further. A connecting rod in a one-of-a-kind classic, after making love to the camshaft, makes a hasty exit through the side of the block. Both

factions agree that a compromise solution of some sort is an absolute necessity. Most enthusiasts in each group would install a substitute engine from another car. A few wealthy purists, calling upon engineering knowledge and bloated bank accounts, would machine the required pistons, rods and components. One enthusiast spent more than \$1000 to weld a block with a gaping hole in its side. Despite careful welding and machine work, the welding distorted the block almost one-quarter inch. Heat treatment, line reaming and boring, 11 months of time and much money subsequently restored originality.

The purist says that a modified classic is no longer a classic. He will not pay much for it. From an economic standpoint, avoid buying modified cars which cannot easily be restored to original condition.

If you are going to buy a classic, you can break down its modifications into two classifications. Value will not be greatly affected if only minor items have been substituted. You can find original equipment such as accessories and instruments at reasonable prices, and the replacement cost is generally deducted from the sales price of the car. But if a classic is replete with enamel in place of lacquer paint, chrome in place of nickel plating, and leatherette in place of leather, things are different. The car would need almost a full restoration regardless of the quality of substitute materials and workmanship. The customized classic is often ruined

(Continued on page 71)

# Analysis of



Morris Minor



Austin A-40



Triumph Mayflower

**Will one of these imports  
answer your transportation  
problem? Here are the answers**

**By the MT Research Staff**

**I**F YOU HAVE NEVER DRIVEN those little imported sedans that have migrated to our shores in increasing numbers, you are probably curious about them. We know a lot of people are interested in them because, when we tested the seven cars above, we answered dozens of their questions: Are those little things safe? There's no room in them, is there? How fast will they go? Could you make a trip in them? What kind of mileage do you get? Bounce all over the road in them, don't you? What happens if a truck hits you?

We set out to find the answers (not including the one about the truck). We tested these seven cars as *you* would test them. We left the fifth wheel, the stopwatches, the flowmeter, and all the scientific stuff back in the research lab. We tested the cars' handling qualities in traffic. We checked their roadability on a graveled mountain road with chuckholes, steep grades, and sharp curves. Our recording instruments were the seat of our pants and our impressions.

We drove each car about 200 miles. For fairness—though Trend employees own duplicates of four of the cars tested—we used carefully tuned (but strictly stock) cars supplied by their distributors. We hopped constantly from one into another for comparisons. Perhaps one of the test drivers fits your description: one is built on beanpole lines and reaches an altitude of six feet two inches; one is just average; another, in the six-foot-plus class, measures at least one axle handle across the shoulders; the fourth can walk through any doorway more than five feet five inches high. The wives drove the cars too (they were delighted). This answered whether big as well as small people can fit into these cars. They did, and with comfort.

Just as you would have, we did a lot of casual driving. To get a fair comparison of the different cars' performance, we also used a 57.6-mile test run that was a dilly. We fought our way

through city traffic for 14.1 miles; we buzzed along on suburban roadways, some of them steep and winding, for another 34.2 miles. We heard gravel rattle under our fenders for 9.3 miles. Our test run took us from sea level to 1875 feet above, and on the roads we took, this was a short-term proposition.

We used the 57-mile test route to test gas consumption. Odometer readings varied from 56 to 59 miles. We averaged them for our figures. If you are sufficiently curious to check your own gas mileage on one or all of these cars, you may want to use our simple method. The gas station attendant thought we were a little off our rocker when we asked him to fill the tank to one of the visible joints in the filler neck. Then we gave the car a good shaking. Air bubbles gurgled to the surface and the gas level dropped. We kept this up until we got the level just where we wanted it without any bubbles. When we got back from the test route, we refilled the tank. In your check, dividing the miles traveled by the amount of gas used will give you a fairly accurate reading.

Our gas consumption checks were anything but an economy run. We made no attempt whatever to save gas. We didn't abuse the cars, but we drove them hard. We did not try to avoid traffic stops. We used lower gears not only when the engine labored but whenever we needed a little extra zip in traffic or on hills. We threw the cars hard into sharp turns. And we averaged 31.7 miles per gallon for all seven cars.

All these cars have something in common: they are not bombs. They can be nursed into fairly respectable top speeds, but their acceleration above 30 miles per hour is far from spectacular in high gear. Miniature powerplants and fabulous gas mileage don't often mix with surplus power.

Delightfully quick and nimble steering is something else they share. Only  $2\frac{1}{2}$  to  $2\frac{3}{4}$  turns of the wheel turn it lock to lock.

# 7 Economy Cars



Ford Consul



Hillman Minx



Volkswagen



Ford Zephyr

Parking is a refreshing experience. The combination of a short wheelbase and quick steering allows you to snap in and out of tight parking spaces with an amazing lack of effort.

Probably the most frequent comments we heard from bystanders were about safety. What happens if someone hits you? It is pure conjecture to say that these cars are any less safe in a collision than their bigger brothers. They are sturdily built. One safety factor in these smaller cars was immediately evident to us: because they are so nimble, the driver has a better chance to avoid accidents.

Just what does it mean to own one of these small imported cars? Did you ever own a Model A, either when they were new, or as your first car? Then you know what it is to feel affectionate about your car, to regard it as a sort of pet. There is an exuberance about the way these cars react to your touch that makes them good companions. They like a firm (and frequent) hand on the gear lever, a sensitivity to their needs. They behave differently when they carry more people. In short, they have to be driven, and the experience is a refreshing one.

If you buy a car every year, or for some other reason must have a car that depreciates very little, better think twice before buying one of these cars. It is unfortunate but true that depreciation on all of these seven cars is high. If you buy one of the domestic independent makes, trade-in value may be low on the open market but still satisfactory if the car is traded in on another of the same make. With the foreign cars it's different: they drop quickly, and their dealers usually can't offer you a very high trade-in.

If you plan to keep the car several years, depreciation becomes less important. Your first cost has been less than on a standard-size car; your regular operating costs have been less. If your yearly mileage is abnormally high, overhauls may be

necessary oftener on a small engine. This depends partly on how you drive: if you habitually punish your full-size car, if you get rather poor gas mileage on any car you drive, don't expect to save in the long run with a little imported job. Any one of them will give you fine day-in, day-out service if you don't expect the impossible from it, but it won't thrive on constant pushing to the limit.

What can you expect to save on gas? If you drive 10,000 miles a year, regular gas at 30 cents a gallon will set you back \$93.69 for the 31.7 mpg that we averaged on all seven cars. MT's '53 Ford V-8 (with Fordomatic) averaged 18.7 mpg, meaning that it would cost \$160.44 to feed it over the same distance. With a small import, you will also save on the amount of oil required to refill your crankcase, transmission, and differential.

Only you can say whether these cars have enough room for your purposes. The size that makes them so handy to drive and park (and to stay out of streetcar tracks) may play tricks on you, though: can your favorite gas station grease a car without a standard tread? (It is even more important to take a non-standard car to the same spot for regular servicing than it is with a popular American car.) Must you depend on the ruts left by previous cars when you drive in winter? If so, these narrow-tread models won't fit.

Parts and service around the country are not yet up to the standard of any domestic product. In a large city you'll have no trouble. Anywhere near an agency for your chosen car (contrary to many evil rumors) you should have no problem. A sudden need for a part while traveling may delay you longer than if you were driving, say, a Plymouth.

The seven cars have a lot in common. Yet they are very different; come on along for the ride, and you'll see what we mean.



SEVEN ECONOMY CARS

# English Bulldog

*The Austin A-40 shows few concessions to Yankee tastes. If unusual features make your mouth water, it may be your choice*



**Y**OU CAN SURPRISE your friends with the Austin A-40 Somerset. A look at the dimensions of the long-stroke, ohv four-cylinder engine does not suggest much power (displacement is only 73 cubic inches). Yet, with the aid of the highest compression ratio of the seven cars tested (7.2:1) and a high-ratio rear axle (5.28:1), it produces a lively 42 bhp. Its smallish trunk turns into a broad, solid platform for large loads. You can move either front seat so far back that your toes can't touch the firewall, or so far forward that your seven-foot friends can stretch out in the back seat.

One of England's top sellers both at home and here in America, the purposeful-looking test Austin was supplied to MT Research by the British Automobile Corporation.

**Neat but ingenious**, the interior abounds in good ideas. Upholstery is simulated leather, and good-quality matching carpet covers the floors. The rather surprising 13½-inch adjustment range on the front seats turns out to have many uses: Extremely bulky packages fit with ease on the rear floor with the right-hand seat forward. Stretching can avoid travel-weariness for front or rear passengers. Cleaning the interior is a snap: not only can you "move the furniture," the floor is flush with the doorsills, and sweeping takes only a minute. Rear door handles have a bezel that twists to make them inoperable. This is a nice feature, but we fear the designers under-estimated the experimental ability of American kids, who all seem to reach the stage when anything that isn't welded in place is subject

to investigation and experiment by their fingers and mouths. **Located high in the center of the dash**, the instruments are easy to see and read. Heat and vent controls are below the dash at the center. Two small glove compartments have hinged doors; one is handy for the driver, who can fish for cigarettes or sunglasses and still keep his eyes on the road.

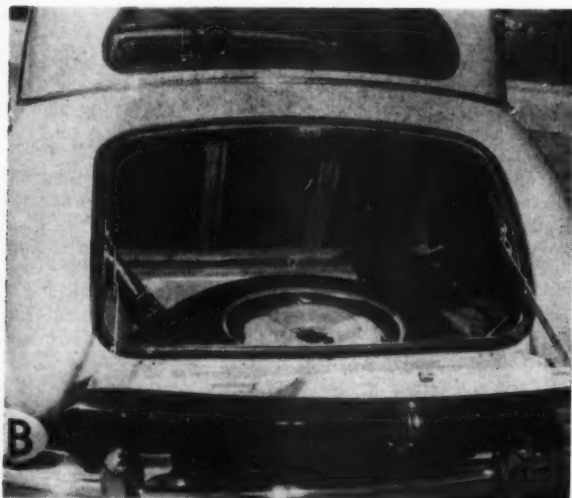
**A tailgate effect** results from hinging the trunk lid at the bottom. When weather is not a problem, it can carry big loads with the lid open. Inside the compartment, all baggage must go on top of the flat-mounted spare tire, and must avoid the awkward gas filler pipe.

**Is it easy to drive?** Yes, with the single exception of the rather stiff, four-speed column shift. We found it difficult to locate gears; perhaps more time with the car would have made us proficient. We rarely used the low gear and got along nicely without it. It is so low that the car would climb virtually anything imaginable. Otherwise, driving movements are pleasant. All-around visibility is good, the wheel sits comfortably in your hands, and both brake and clutch operate smoothly and effectively.

**How does it perform?** The Austin gets right down to business. It's no bomb, but we cruised without effort at 60. Acceleration in the middle range is good but not exceptional in high. Dropping down a gear (it would be an easier job with a fast shift) zoomed us out of traffic tie-ups. We pointed the car into tight spots in both third and top gears and came out of them pointed just where we wanted to go. When we managed to break the back end loose on bumpy gravel, an easy twist of the wheel straightened us out. The brakes were excellent. We locked them in loose gravel and slid gracefully to a straight-ahead stop. Our experiments in handling qualities no doubt affected gas mileage, but we still got almost 27 miles per gallon.

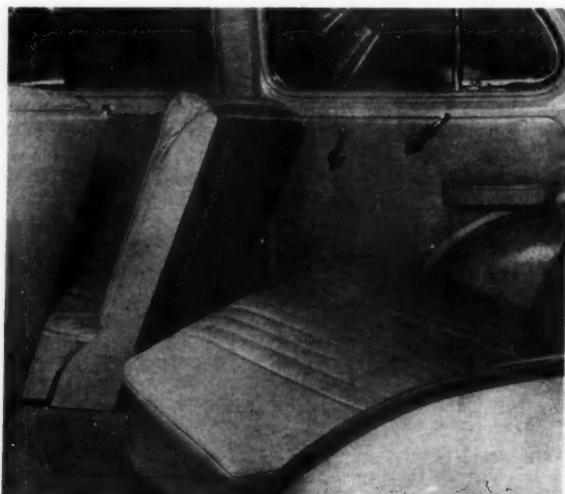
**How does it ride?** Much more firmly than U.S. cars, about average compared with the other six tested. The car has an anchored-to-the-road feeling, and doesn't bottom or float on bad dips. You feel the quick snubbing action when you hit short, sharp breaks in the road. The firmness prevents roll on curves. The car is tightly put together, and body noise and rumble are pleasantly absent. The front seats are comfortable and thickly padded. The rear seatback is almost at a lounging angle and is a foam rubber pad without springs.

**Whom will it appeal to?** The buyer who wants something different but extremely practical. The whole car is neat and smoothly finished without unintentional gaps. It has a built-in honesty on the highway and in traffic. It may have a left-hand steering wheel, but it remains typically British.



*The unorthodox trunk of Austin's Somerset becomes a quarter-ton pickup with no bother whatever. Just drop the deck lid*

Fifty-four



*Musical chairs, anyone? This looks odd, but being able to move the front seats can be handy with children and packages*

Motor Trend

**THE LATEST HILLMAN**, supplied for our test by Rootes Group headquarters in Los Angeles, is an unashamed hybrid stylistically, with especially pleasing results. Changes from the familiar former model are minor with the exception of a Ferrari-type grille, which transforms the front end with a new note of sophistication.

**Luxury touches** make the interior lively. Upholstery in the test car was red simulated leather, and red carpets were used front and rear. There is plenty of room for four. A larger number calls for a squeeze. Below the instrument panel are two open English-style "parcel shelves" instead of a glove compartment. The radio fills the left-hand one.

**Controls and instruments** are in various novel spots. The central instrument panel doesn't work too well for American buyers, especially since the speedometer remains in its original position on the right, where it is partly hidden from the driver. The parking brake lies parallel to the floor at the left of the driver's seat. It did not catch on clothing, despite our predictions.

**Luggage space** is, surprisingly, quite spacious. The trunk opens in the usual American way from the bottom but uses a shelf with the spare tire and tools beneath it. The filler pipe takes up part of the space above.

**Driving the Minx**, even with its four-speed column shift, comes easy to an American driver. The shift has a short throw and a quick, though spongy, action. Only slight toe pressure operates the brakes. Brake and clutch pedals are close together and take a little practice. Are Americans' feet as big as all that? The headlight dimmer switch is too close to the clutch and can snag a shoe sole. With the large windshield and low hood, visibility is superb.

**Top-notch handling.** Like most of these cars, the Hillman sticks to the road like glue. Hitting the brakes hard in loose gravel sent us into a straight-ahead slide. There was no wheel fight. The rear end tracked around behind us faithfully. When we deliberately broke it loose in rough turns, we had no trouble getting back in the groove again. Acceleration compares with the rest of the cars. The Hillman's flat-head four has 37.5 bhp, which leaves something to be desired over 40 mph in high gear. Sixty mph was a satisfactory cruising speed, though, and we could well have gone faster. Our gas check gave us a highly satisfactory 30.3 mpg.

**American-style ride.** This newest of Hillmans differs from the Austin in its soft (but not sloppy) ride, adding to the feeling that here is an American sedan that has somehow been reduced in size. There is some tendency to pitch and some body

## SEVEN ECONOMY CARS

# International Style

*Hillman's latest is a slick little Anglo-Italian in looks, an American in ride*



roll on sharp curves at moderate cruising speeds. Rough roads produced no bottoming. Body rumble and odd noises were missing under *all* conditions. Rough roads led to noticeable road shock at the steering wheel. If Rootes Group designers had the U.S. market in mind when they worked out details of the Hillman's ride, they did some cagey figuring. Especially when one considers the size of the car, they have arrived at a rather remarkable compromise. Perhaps most important of all saleswise is that an American riding in a Hillman for the first time *doesn't* notice the ride.

**That "crazy" front seat.** A concave back cushion forms an unusual two-passenger, semi-bucket seat in the Hillman. We were unable to work out the right combination for comfort. If we sat directly back of the wheel, our left shoulder was well supported by the curve of the seatback but our right shoulder hung out in space. We tried sitting on the bias but the effect was too odd. Give this seatback a try on an hour's drive. Perhaps it won't bother you, or if the car is your choice otherwise, see what you can work out with a cushion on the right side of your back. We hope that later cars will come across the Atlantic equipped for drivers with matching shoulders.

**Summing up.** Excellent workmanship and finish carry out the impression of careful detailing that is perhaps the Hillman's most appealing feature. The car is docile in traffic and on the highway. Comparing a Hillman with an American car, size and power are virtually the-only important items that are reduced.



The tidy, appealing front seat of the Hillman boasts a new steering wheel and time-tried low, left-hand parking brake



In the rear, the Minx has no startling innovations, but provides surprising room for passengers of large dimensions

# SEVEN ECONOMY CARS

## Conceived in Detroit

*They may have been born across the Atlantic, but we think you'll agree with us on the origin of Ford's Consul and Zephyr Six*



**T**HE LATEST MODELS FROM DAGENHAM, Ford's big English factory, share the same "step-down" body à la Hudson. It is hard to tell them apart from the side or rear; the Zephyr's Aston-Martin-type grille makes it look different from the front. Both cars show obvious resemblance to the Detroit-built Fords, but designers have skilfully reduced them in size. To avoid awkwardness, for example, they use 13-inch wheels.

Both cars, supplied to MT Research by Holmes-Tuttle of Los Angeles, are unusually roomy for their size (the Consul has a 100-inch wheelbase, the Zephyr four inches more). Each will take three people front and rear if necessary, but not in great comfort for long hauls. Both use new-type ohv engines that are over-square and have full-flow oil filters with the same cartridge as that on an American Ford Six. The Consul is close to the Austin in horsepower (47 against the Austin's 42) but the Zephyr boasts a full 68 bhp and, of course, six cylinders, in which respect it stands alone among the cars we tested. Incidentally, it also costs more than the others (about \$200 more than the Consul). The Consul is the heaviest of

the "fours" tested, and the Zephyr tops even it by 185 pounds.

U.S. drivers will feel immediately at home in these cars. Both Fords have standard three-speed shifts (and excellent ones, too). Except for the arm-type direction signals, it would be difficult to detect their national origin. Let's see how they compare with one another:

**From the driver's seat.** A trim, tilted panel nestled between the dash and the wheel holds the instruments and most switches. An open shelf extends right across the dash itself. It is large enough to hold practically anything, including the entire radio set, if you want one. Its coated paper covering was already curling up. A cane-type emergency brake is at the right of the steering column. The hood latch, obviously unchanged from the cars to be driven in Britain, is out of reach of a short driver, at the extreme right of the panel. The right-hand vent is there too. A handle at the left gives quick, positive seat adjustment.

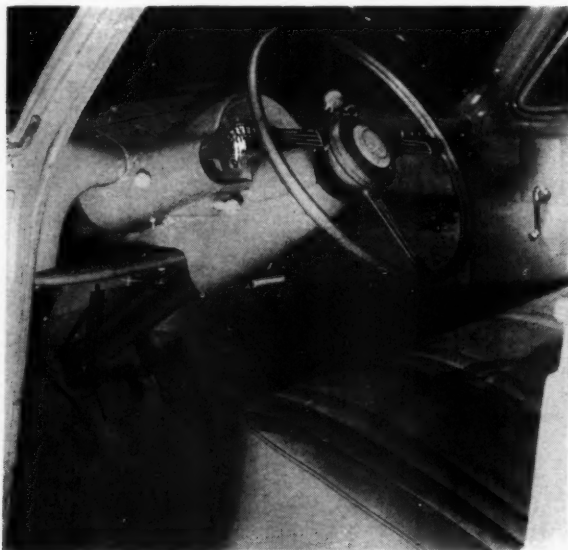
**Are the two cars different inside?** The Consul is neat and plain, the Zephyr quiet but fancy. Tan or red simulated leather covers the Consul's seats; the Zephyr offers blue as well, and foam rubber softens the more elaborately paneled upholstery. All four doors have armrests in the Zephyr; the Consul has none, though Zephyr armrests will fit if you want to pay extra for them. Actually, the Consul has more usable seat width without them. Felt-backed plastic covers the floors of the Consul. It has proved short-lived on the year-old Consul at Trend. The Zephyr boasts soft, colorful, well tailored mohair mats with a small but adequate rubber insert under the pedals, and its back seat has a final luxury touch in a folding center armrest.

Neither of the cars can be locked from the inside. Why an interior lock has been omitted from the right front door is a mystery. In one Trend family, the wife solves the problem of night driving by the cumbersome method of locking the door with the key when it is open, then getting in and shutting it behind her; then it cannot be opened from the outside.

Every attribute of U.S. trunks seems to be present in these Fords. The spares go upright at the side, in the handy but space-consuming spot familiar to American cars. A high sill,



*On both the Zephyr (here) and the Consul, reflections from the dash were bothersome. Zephyr is finished more smoothly*



*Wheel position, though on the high side, is a comfortable one. Both cars (this is the Consul) use a durable "leather cloth"*



complete with near-center gas filler, doesn't help loading. At the same time, there's a lot of useful room, and no baggage-snagging projections.

**Are both cars easy to drive?** Yes. Except for glare from the top of the brightly enameled instrument panel, it would be hard to make improvements. Brake and clutch pedals hang from the dash (these cars actually appeared with this improvement before U.S. Ford products). They share one hydraulic master cylinder, mounted high on the firewall where you can check it, if you like, as easily as the battery water. Hydraulic operation gives a smooth, light clutch that is especially suitable for the greater vibration that is a part of virtually every four-cylinder engine.

Both cars have column shifts with firm linkage that made us wonder why everyone is so enthusiastic about automatic transmissions. The throw is so short that we managed it easily without moving a hand from the wheel.

**A difference in handling.** As all auto hobbyists know by now, a Zephyr carried off the honors in this year's Monte Carlo Rally. Its extra power certainly makes it a more likely winner than the Consul would ever be, but our tests showed the smaller British Ford far ahead in precise handling characteristics. Indeed, it was nothing short of excellent. Traffic and parking are a whiz. On the test route we forced the Consul into sharp turns at high speeds and it nonchalantly brought us through them with no fuss. We broke the rear end loose on some bumpy turns, but a simple short twist put us back in command.

Under normal driving conditions, there is nothing whatever missing from the handling of the Zephyr. But it has a comparatively heavy front end, and the rear broke loose easier than the Consul's in sharp turns on graveled stretches. In acceleration and top speed, the situation is of course reversed. The Consul's acceleration begins to drop off at about 35, the Zephyr's not till 45, which is far ahead of any other car tested. Though the Consul will top 70 with ease, the Zephyr has a 10-mile edge on it. (Sixty is completely comfortable for Consul cruising, nonetheless.) The Consul yielded 27.4 mpg and the Zephyr 23.



Even a large man finds room in the rear seat of the colorful Zephyr. All armrests are well placed. Center one folds up

**A firm ride—and a soft one.** Back in August 1951, MOTOR TREND tested one of the first Consuls available. Its ride impressed us then, and it still does. Most short-wheelbase cars pitch considerably on bumpy roads, but not this one. Big and small bumps are all of a piece to this car, and passengers sit steadily and snugly between the axles on any sort of road. Unit body and frame construction contributes to the absence of annoying squeaks; rumble is missing too.

The Zephyr has a more American touch. It rides more softly than its little brother, but the front end floats a bit and passengers feel more pitch and roll on curves. The effect, while not at all bad in itself, made us miss the feeling of precision that is such an enjoyable part of driving the Consul.

Rear seat passengers do very nicely in either car. While the stretching room hardly compares with American models, there's enough toeroom, an occasional change of position is not impossible, and the frame rails that you must step over to enter the doors help to impart a secure feeling of sitting in, rather than on, the car. Passengers in the Zephyr do even better with the softer ride and foam-rubber seats, though they have a little more body roll to contend with.

**How are they finished?** Both cars have body panels that fit well, a good paint job, and a general absence of untrimmed edges. Both are straightforward in design with little fuss or surprise about them, so that appreciation comes from learning their solid qualities rather than in discovering fascinating innovations. In England, the Zephyr is the largest Ford rather than one of the smallest, which explains its surprisingly spacious interior.

That, however, is of mainly academic interest to us. Either car will attract a lot of attention in the U.S., but it is the Consul that might be called "Model A, Mark II." The Zephyr's price—especially if you consider depreciation—puts it close to or even above the less fancy American Fords (as well as Chevies and Plymouths). If you want to have fun, the Zephyr will give it to you. But the Consul represents something else: Ford could introduce it right now as its new American small car if the time were ripe, and a growing number of automotive crystal-gazers think that it might be.



That trunk, even with a high sill, holds a good supply of suitcases for quite a long trip. There are few rough edges

# SEVEN ECONOMY CARS

## 42 Miles Per Gallon

*There's no pointless plush about the rugged Morris Minor. It doesn't need any, with gas mileage like that*



**G**OUGH INDUSTRIES, Nuffield Products distributor for Southern California, supplied us with a Morris Minor. We have rarely seen anything, let alone any other car, that so well fitted the description "neat but not gaudy." The Morris is designed for a purpose: to go, and keep going, as far as possible on practically no money. In order to do this, the car has been improved constantly. The latest change is to an ohv powerplant like that in the newest Austin A-30, or "Seven" (not to be confused with the A-40 we tested, which is much more popular here). The Morris is considerably cheaper to buy than the other cars tested; combined with the astonishing average of 42.2 mpg, this qualifies it as a true economy car.

**Does it look like a stripped model?** No, the exterior shows excellent workmanship and finish. There is a minimum of chrome and applied ornamentation, and the interior is rather dashing for an economy car. Upholstery is bright simulated leather, the floor is well carpeted, and the headlining is washable plastic. The driver's seat cannot be adjusted while it is occupied, but must be tipped forward. Of course this lessens the Minor's usefulness when different-sized people constantly drive the car, and it makes restful seat changes difficult on trips.

**Are there adequate controls and instruments?** Yes, and they are unusually well placed by American standards. Instruments are in front of the driver, a glove compartment is on the right, and a long, straight-across open shelf lies underneath. There is no question of a third front-seat passenger, so the emergency brake lies flat against the floor at the driver's right, between the

individual seats. The way is clear, too, for a positive floor-mounted shift (all the other cars tested except the Volkswagen had column shifts). There is a heater but no ventilating system.

**Is it easy to drive?** It can hardly help but be, especially when parking or maneuvering in traffic. You will have to accustom yourself to fine tolerances in your footwork, for both brake and clutch pedal are tiny, and they are close together. Low gear (it's a four-speed box) was not necessary in level starts. The lever occasionally refused to slip into second. Vision straight forward is excellent because of the sloping hood. Check to see whether the left cornerpost bothers you in making left turns.

**How does it ride?** A mite stiffly for rough roads; with complete satisfaction on smooth stretches, though you can feel expansion joints in the paving. Thanks to the tight suspension (torsion-bars on the front, leaf springs at the rear) the body rolls very little on curves, and the Morris successfully avoids all pitching and bottoming. Indeed, for prompt and precise response in any kind of turn, this sturdy midget takes a back seat to few cars we have tested at any price.

**Does it have any performance?** Not in the stateside sense, but it keeps up with most traffic. The gearbox is strictly for use. Acceleration was fair throughout the middle range, and the little car surprised us by still having some go left at 60. For smooth cruising you won't go much over 50, even on level stretches. The engine works hard above that point.

**Is its handling precise?** Yes, it goes where you want it to, holds the road, and stays out of trouble in tough turns on all sorts of roads. We felt some wheel hop on our graveled stretch when the car was in third gear.

**How would it be for a trip?** If you like to travel leisurely and there aren't too many of you, your Minor should be excellent for a trip. Rear seat legroom and headroom are limited, so don't plan on a full complement of four big people with their luggage. The Morris's trunk is very civilized, with a clear space above a shelf. The lid opens so wide that it can lean back against the roof. The tire and tools fit under the shelf in a compartment of their own. An incidental convenience is that the front door lock is on the right side; in many foreign cars it remains on the left, where it is little use in American traffic.

**Economy first.** If low first cost and running costs top your list of essentials, the Morris is your best bet. The new ohv engine is by no means untried, and the hands of thousands of owners have proved the sturdiness of the rest of the car. Before buying any unusual car—or any car at all, for that matter—the prospective buyer should test it where he will be driving it. Only then can he tell what to expect from a new car.



*The Minor's controls are all at your fingertips. The hand brake is especially good, tucked as it is between the seats*

Fifty-eight



*Small but adequate. Tools and tire are permanently out of the way in their own compartment, where they can't soil bags*

Motor Trend

**WHEN WE DROVE OUT** of the Vaughan-Singer agency in Los Angeles with the Mayflower, we suspected we would receive a lot of comment on this quaint-looking little car. The comments—and there were plenty of them—were obviously spontaneous: “Oh! What a cute little car” (woman). “Looks top-heavy” (man). “Watch-charm Rolls-Royce” (man). “Like a baby buggy without handles” (woman). We had no intention of conducting a public opinion poll, but one thing was apparent to us—you either like the looks of this car or you don’t. And even if you don’t, you’ve got to admit it has distinction. It has something else remarkable—an engine with amazingly little vibration.

**How does it ride?** Definitely on the firm side. Big bumps don’t faze it, but short, sharp ones are quite obvious. It didn’t bottom on severe dips at 45 mph. Sharp curves and rough roadways produced little pitch or roll. The body was free of vibration even on rough spots. It rumbles under some conditions; undercoating would probably clear this up. Steering wheel vibration was quite noticeable on washboard roads.

**Is there enough room?** The front seats are exceptionally comfortable for both passenger and driver. You sit quite high, in keeping with the dignified air of the car, and the semi-bucket seats hold you in position. There is ample legroom when the seats are moved back, but this restricts rear seat legroom.

**Is it easy to drive?** We found it very pleasant. The large, squarish glass areas give excellent visibility. Many U.S. drivers will prefer to add a larger rear-view mirror (the standard one is strictly ladies’-purse size). Maneuverability is excellent. The steering-column shift lever (standard three-speed shift) had a rubbery feeling to which we didn’t become completely accustomed. Changing gears must be done quite slowly. When we violated the manufacturer’s recommendations on this point, the transmission produced some very unhealthy noises.

**Do you have to treat it gently?** No, handling is tops. We flew the car into tight, graveled turns at higher-than-sensible speeds, yet we found little tendency for the rear end to break loose. On very bumpy turns a slight correction on the steering wheel snapped us back on the track. There was no wheel fight or tendency toward slewing in patches of loose gravel. Brakes proved adequate. Acceleration is fair up to 35 mph but falls off rapidly beyond that point (the flat-head four gives just 38 bhp). Caution is desirable when passing other cars on the highway. We pushed up to 60 mph and felt we might have gone a little faster. We felt considerably more comfortable, though, when cruising at 45 to 50. We got almost 35 miles per gallon.

**Are controls and instruments handy?** Instruments are grouped

## SEVEN ECONOMY CARS

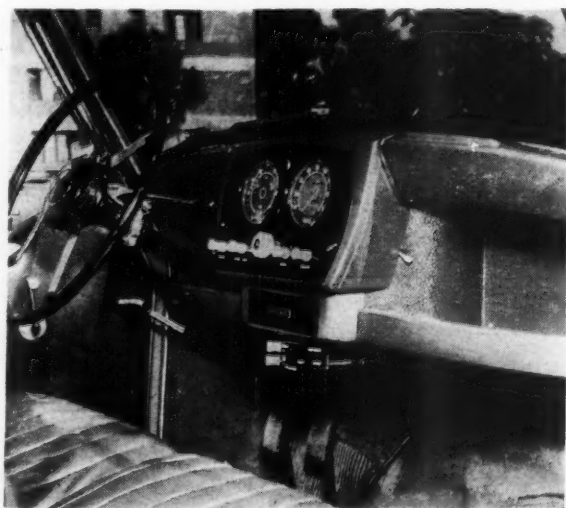
# Elegance in Miniature

*The Triumph Mayflower is just as much at home in rough going as at a garden party*

in a neat cluster in the center of the dash. The speedometer is on the right-hand side and is difficult for the driver to see. The cane-type emergency brake is on the left side of the steering column. Controls are within easy reach of the driver with the exception of the cowl vent lever (it’s out of sight under the instrument panel). Twin electric windshield wipers have excellent sweep and overlap. An open parcel shelf extends on both sides of the instrument panel.

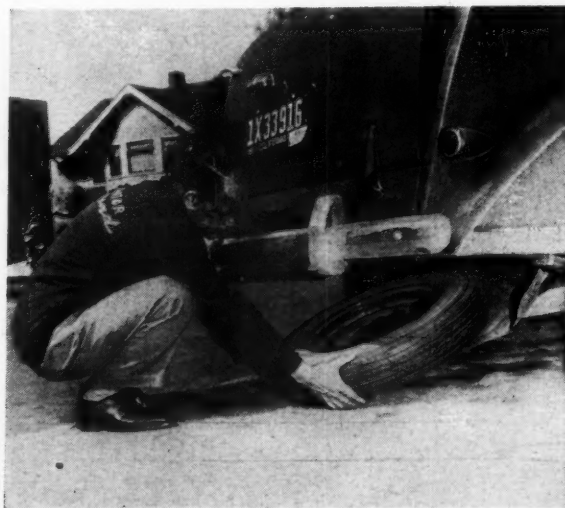
**Is the interior novel also?** Not particularly, though it’s trim and smart. Upholstery is good-quality simulated leather. Washable plastic covers the headlining. Rubber floor mats in front and rear are closely fitted. Unlike current domestic cars, the Triumph’s inside door handles push forward to open. If this bothers you, it is simple to rotate them 180 degrees. The trunk’s lid folds down to form a tailgate and to facilitate loading luggage. The license plate holder and light are hinged so you can drive the car with the lid open if you want to carry an unusual amount of luggage. The spare wheel is in a hinged tray under this compartment, where it will never soil luggage. Tools and jack are stowed under the hood.

**Is the car well put together?** Yes, body panels fit well and the trim and finish are good. A single key fits all locks including the trunk and hood. The single door lock is on the left-hand side. **In general**, the Triumph Mayflower is a smart and utilitarian little town car that surprised us with its good behavior where the going was tough. It would also be quite satisfactory for trips of moderate length and speed.



Here's the front compartment of the "miniature Rolls-Royce." Controls may look foreign, but they work like a U.S. auto

October 1953



There are few handier ways to get your spare out of the rear compartment than to have it fall, clean and neat, at your feet

Fifty-nine



SEVEN ECONOMY CARS

# Hitler's Happy Legacy

*Want real fun in your driving? Enjoy limousine craftsmanship? Then look at the Volkswagen!*



**H**ERE IS WHERE we had the most fun. Competition Motors loaned us the truly different Volkswagen, lineal descendant of Hitler's "People's Car." Its horizontally opposed, four-cylinder, air-cooled, ohv engine is in the rear. The whole car is crammed with features as unusual as the engine.

**Does it ride smoothly?** Better than average. The ride is reasonably soft but still firm enough to get away from excessive pitching and body roll. There was no bottoming or tendency to float on rough roads, owing to the independent torsion bar suspension on all four wheels, and the swing axles. A small but noticeable amount of road shock reached the wheel on bumpy roads. The body is free of squeaks, rattles, and vibration, but the whine of the big cooling blower is audible.

**Are passengers comfortable?** Here the designers have gone all the way. The front seats have a broad adjustment range. If you care to drill an extra pair of holes you can stretch this to 17 inches in the extreme rear position. The front seats would then touch the rear ones. If the driver and front seat passenger are not too long-legged, the rear seat passengers will have reasonable leg room. Visibility ahead and to the sides is excellent. To the rear, the small window restricts it. Heating and defrosting vents utilize the warm air around the engine to heat the car. This system had a little paint smell in the test car (the Trend Volkswagen, which is but a few weeks old, no longer smells). Despite the lack of cooling vents the interior was comfortable on a hot day, doubtless because of the rear engine.

**Pour le sport.** It's not only easy, it's real sport. The seating position is good, the wheel seems in the proper place and the

four-speed shift lever is on top of the tunnel where your hand falls naturally on it. This is very important in this car because you *must* use the shift lever often. This frequent shifting is no trouble because of the positive action of the shift lever (the transmission is at the rear with the engine, but you wouldn't guess it). Changing gears upward or downward means a quick flick without hesitation or double clutching, thanks to synchromesh like that in the Porsche (the Porsche costs twice as much as the Volkswagen). The brake and clutch pedals are a bit too close together for comfort.

**Are the controls unusual too?** The speedometer is directly in front of the driver. The balance of the instrumentation consists of warning lights on the speedometer dial. The emergency brake lies almost flat on the floor tunnel. If it is on, the car will not move from a stop. There is no gas gauge. If you run out of gas you simply move a toeboard valve to the right with your foot to turn on the reserve supply.

**Sparkle plenty.** Handling qualities are exceptional. We expected the car to feel different because of the rear engine, and it did. We soon became accustomed to it, and when we did we reached a conclusion—without reservation, the handling qualities of this car were better than any other in the group. You *can* break the rear end loose, but only if you work at it. Excellent steering and fine balance give you command of the car and the slight corrective action you may need on the wheel is almost automatic, thanks again to the swing axles. The little engine cannot deliver high performance in high gear, which is an overdrive. Gas consumption on our test route (we used third gear more than usual) was 33.9 mpg.

**Plush with a purpose.** This one is really plush. The interior trim is as good as in some cars costing an additional \$2000. The seats are upholstered in top-quality fabric and the floor and "spine" (it looks like a tunnel, but of course the car has no driveshaft) are covered with very heavy carpet with thick rubber pads at every conceivable wear point. To supplement the small luggage space under the forward deck (the gas tank and spare take most of it) a second open luggage space is provided behind the rear seat. The battery is in the open just under the right-hand edge of the rear seat. We view this with some alarm. Acid can spill in a collision, and all lead-acid batteries emit smelly fumes.

**What about the exterior?** The car is well put together and the finish is excellent. The only fault we could find was the rather flimsy bracing and support for the forward deck.

This is one for the connoisseur. Do you want a car that breaks sharply with tradition, and does so with undeniable competence? If so, the Volkswagen deserves your attention.



Off in the "trunk" is a horizontally opposed ohv "four" that seems to put out remarkable power for its listed 25 bhp rating

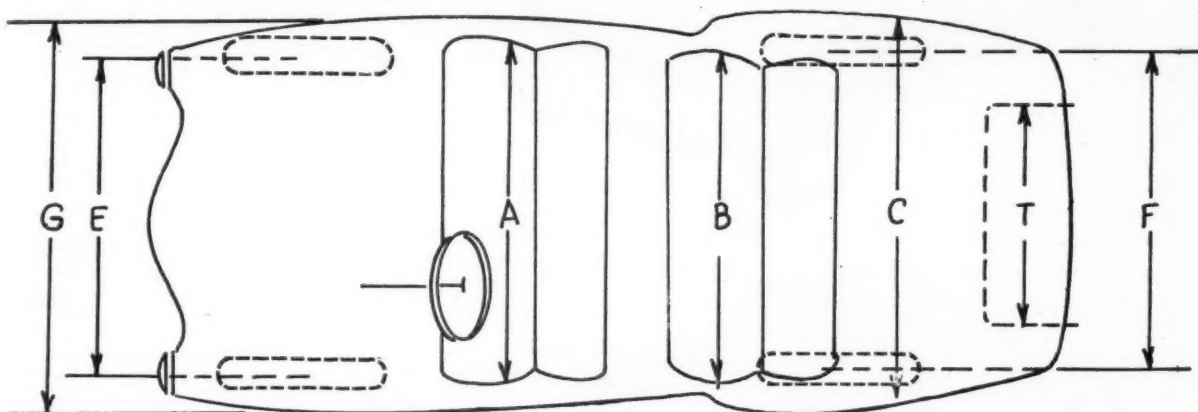
Sixty



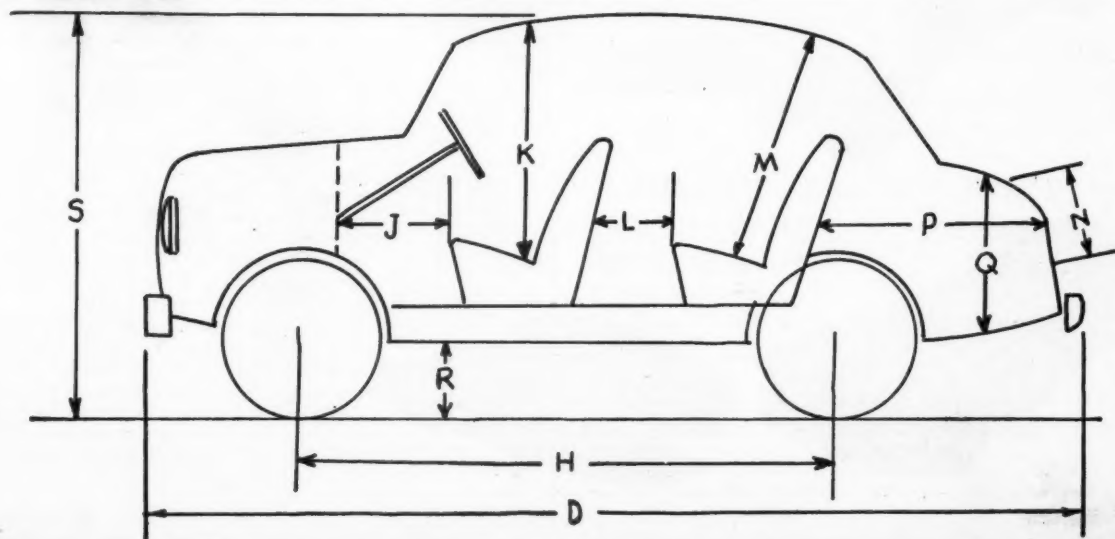
From the pocket in the door to the polaroid sunvisor, the VW has been built to appeal to discriminating world drivers

Motor Trend

CAR	ENGINE						WEIGHT & RATIOS			CHASSIS		
	Type	Bore & Stroke	Displ. Cu. In.	Comp. Ratio	BHP @ RPM	Torque Lbs.-Ft.	Dry Weight	BHP per Cu. In.	Lbs. per BHP	Turns L to L	Rear Axle Ratio	Fwd. Speeds
Austin A-40.....	Ohv, 4	2.59x3.50	73.2	7.2:1	42@4600	55@2200	2184	.57	52.0	2.3	5.28	4
Hillman Minx.....	L, 4	2.56x3.74	77.2	6.6:1	37.5@4200	59@2200	2039	.48	54.6	2.5	5.22	4
Ford Consul.....	Ohv, 4	3.13x3.00	92.0	6.8:1	47@4400	74@2400	2262	.51	48.1	2.5	4.56	3
Ford Zephyr.....	Ohv, 6	3.13x3.00	138.0	6.8:1	68@4000	112@2000	2447	.48	35.9	2.5	4.38	3
Morris Minor.....	Ohv, 4	2.28x2.99	49.0	7.2:1	29@4800	40@2400	1662	.59	58.0	2.5	5.38	4
Triumph Mayflower	L, 4	2.48x3.94	76.1	6.8:1	38@4200	58@2500	2058	.50	54.2	2.3	5.13	3
Volksw gen.....	Ohv, 4	2.95x2.52	69.0	5.8:1	25@3300	51@2000	1550	.35	62.0	2.4	4.43	4

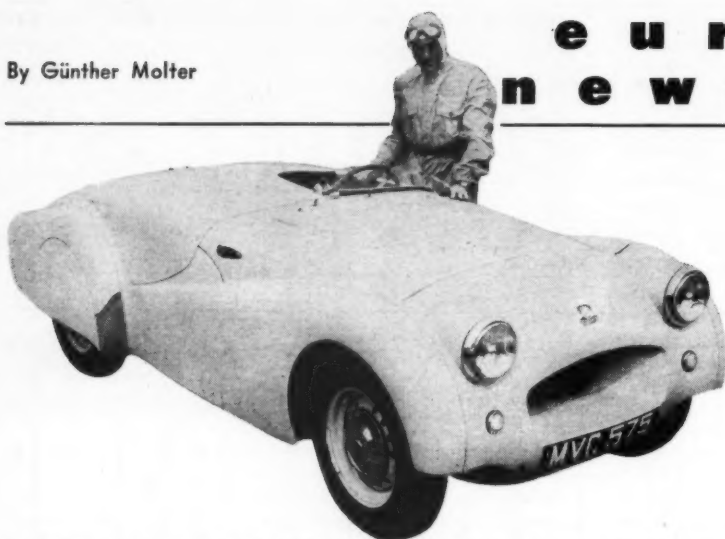


CAR & MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	Clear Door Opening		TIRE SIZE
																			F	R	
Austin A-40.....	52	39	51	159.5	48.5	50	63	92.5	13 27.5	38	20 5.5	34	21	31.5	25	6.75	64	32.5	31	29	5.25:16
Hillman Minx.....	51.5	38	57	157.5	48.62	48.5	62	98	21.5 26.5	36.5	13 8.0	33.5	22.5	21 Av.	17	7	60	45.5	33.5	30.5	5.00:16
Ford Consul.....	53.75	53	49.25	164.75	50	49	64	100	19 24.5	37.5	14 8.5	37	21.5	31	18	6.5	60.75	48.5	31.5	31	5.90:13
Ford Zephyr.....	53.75	53	49.25	168	50	49	64	104	19 24.5	37.5	14 8.5	37	21.5	31	18	6.5	60.75	48.5	31.5	31	6.40:13
Morris Minor.....	50	40	41	148	51	51	61	8.6	10 25.5	36	23 7.5	32	23	23 Av.	16	6.75	60	32	36	—	5.00:14
Triumph Mayflower...	51	37.5	51	156	46	49	62	84	25.5 20.5	36	6 11	34	18.5	21	19	7.5	62	40	36.75	—	5.50:15
Volkswagen.....	47	52.5	42	160	51	49.2	60.5	94.5	13.5 30.5	36.5	0 17	32.5	—	17	8.5	6.3	61	49	36.5	—	5.60:14

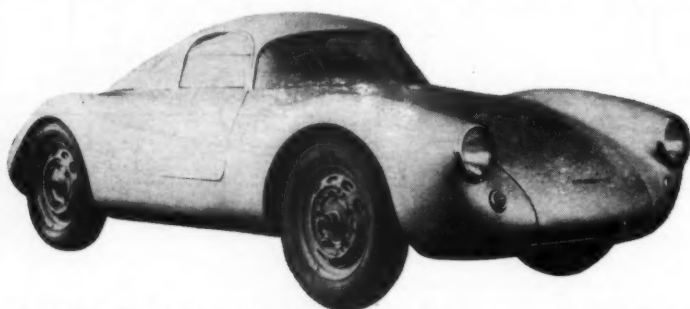


By Günther Molter

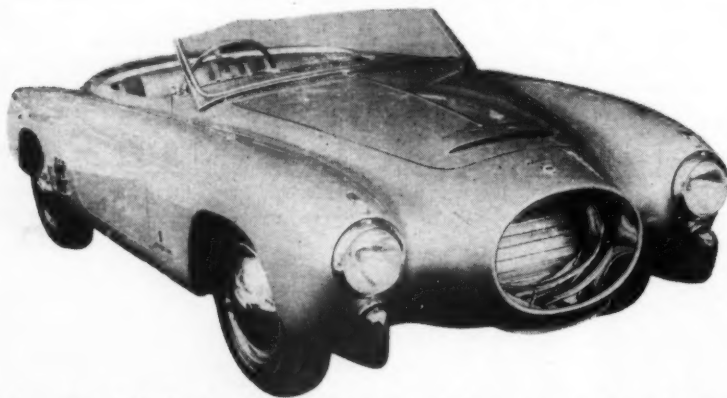
# e u r o p e a n n e w s l e t t e r



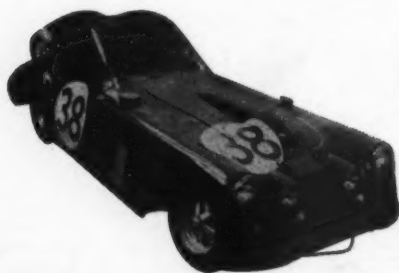
*Ken Richardson, Standard Motor Company Chief Driver, drove the Triumph 125 mph*



*New Super Porsche offers little resistance to wind, took two firsts at Le Mans*



*Farina says of his Lancia: "The esthetic factor is left to proportion and surface"*



*Bristol 450, with stabilizing fins at rear, won first in its class at Rheims*



*Jewel-like, two-cylinder aluminum French car for early export to U.S. . . . Facts about Italy's new diesel Fiat . . . More about the Trippel*

**F**RANCE: MONSIEUR PANHARD'S latest model, the Dyna 54 (photo in September MOTOR TREND), is a very attractive car built almost wholly of aluminum. Though it is described as a four-seater sedan and can hold six on its 101-inch wheelbase, it weighs but 1400 pounds. The engine is the justly famous **horizontally opposed, air-cooled twin** that powered the previous model. It has a 7.25:1 compression ratio and puts out 42 bhp at 5000 rpm. Two new rubber cushions keep it quiet. The excellent power-to-weight ratio produces some interesting results: from a stop, 50 mph takes 10 seconds; 62 mph, 15 seconds; and 75 mph, 24 seconds. With the aid of its fourth gear (an overdrive) **the car can reach 82 mph**. To add to the fun, it averages **33.5 mpg at 50 mph**. The Dyna uses aluminum alloys in its engine, transmission case, body, and chassis. There is a platform frame. The front crossmember is a detachable steel tube with steering gear, engine mounts, and front suspension attached to it. Removal of the whole assembly is a matter of 15 minutes. Design of the new streamlined body will please Americans: it's about the size of an Austin or Hillman, but has more of what can best be described as chic. Front fenders and hood lift in one piece; there is no valley between. Thanks to the front drive, the floor is low and flat. The new Dyna will soon be seen in the U.S. Its price in France is about \$2000. A hotter item for the U.S. market will probably be the Dyna chassis, which will sell for little more than half as much . . . The appealing and mysterious Trippel (June MT) seems finally to have found a home in France, where it is scheduled for production with a Panhard engine.

**ITALY:** Space prohibited our giving you full data on the **new Fiat diesel** (photo in September MT). Here you are: The Turin plant will install the four-cylinder, 41 bhp engine in the standard 1400 chassis with a five-speed gearbox. Idea is not to replace the gasoline-powered 1400 (45 bhp) but to offer relief from gasoline prices. The 116-cubic inch engine has been proved in a tractor and a 1.5-ton truck. In the sedan it gets a **whopping 39 mpg**.

**ENGLAND:** Not to be outdone in the seemingly endless struggle for the Yankee dollar, Triumph will soon have in the U.S. that surprising performer, **the Super Sports**. Certain changes which we cannot yet tell you about have been made in the car, whose record breaking has made it eagerly awaited by American sports fans.



**THIS 1940 FORD HAS GONE 142,000 MILES WITHOUT OVERHAUL**

**... YET THE ENGINE IS AS POWERFUL AS NEW!**



Winthrop A. Johns and the original test car—says Win, "I don't expect to live long enough to wear this engine to the first overhaul! At the present rate of wear it will run at least 700,000 miles."

**This Car, AND Hundreds of Other Test Vehicles Are Revolutionizing Motor History by Means of a Special New Device that Neutralizes Corrosive Acids as They Are Formed!**

#### IS IT ACID OR FRICTION?

Engine friction—excepting fans, pumps, belts and windage—is negligible. Our tests show almost no metal to metal contact. Acid is the real cause of motor deterioration.

#### WHERE DOES ACID COME FROM?

Gasoline is about 1/1000th sulfur. Leaded gasoline also contains bromine and chlorine. In 1000 gallons (enough for 15,000 to 20,000 miles) there is about 6 lbs. of sulfur—enough to make 5 gallons of strong sulfuric acid. When gasoline burns corrosive gases ( $\text{SO}_2$ ,  $\text{SO}_3$ ,  $\text{HBr}$  and  $\text{HCl}$ ) blow by the pistons into the crankcase. Here they combine with the condensed water almost always present in oil to set up a vicious circle.  $\text{SO}_3$  is a thirsty compound. It absorbs water to form sulfuric acid, which in turn attracts more water, forming  $\text{H}_2\text{SO}_4$ ,  $\text{H}_2\text{CO}_3$ , and more  $\text{H}_2\text{SO}_4$ ,  $\text{HBr}$  and  $\text{HCl}$ . Acids cannot work without water; your engine makes large amounts of it; you have seen it drip from your exhaust.

#### WHY AREN'T MOST ENGINES DESTROYED IN A SHORT TIME?

Some engines ARE. In door to door service some have an appallingly short life. Often only 15,000 to 20,000 miles! Enough materials blow into the crankcase to make a pint of acid a day. Most of these are removed by ventilation but the small amount left is enough to damage your engine seriously. Even carbonic acid, which you drink in soda pop, is powerful enough to corrode iron 1/3 inch per year!

#### HOW CAN YOU ELIMINATE THESE ACIDS?

Acids destroy themselves by eating metals. Acids attack first metals most easily eaten. Almost perfect protection is obtained by a special alloy of magnesium and aluminum. Since magnesium is by far the most easily attacked metal in the engine, the acids eat it and are destroyed. Without acids water is no longer held. Without water acids cannot form. The vicious circle is interrupted. Less sludges, gums and resins are formed.

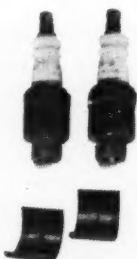
#### HERE IS THE PROOF

These are facts, not claims, gathered in 13 years of road tests over millions of miles in 1500 cars and trucks. These were not laboratory tests under simulated conditions.

1. Power. No engine tested decreased in power. Many have gone 120,000 miles. The graph shows normal decrease of engine power, compared with the power output of engines protected from acids. Top performance is yours almost indefinitely—one, two, five or even ten years. Most protected engines are outlasting their bodies.

2. Spark plugs last up to 60,000 miles. Waste less gas. At left are two plugs from a set of 8 after 60,000 miles—the entire set still testing 95% efficient!

3. Friction wear almost disappears. Fleet tests show wear reductions of almost 6 to 1 in stop and go service, and 10 to 1 in passenger cars. The left hand bearing after 112,000 protected miles is 1/5th worn out, while the other at 63,000 miles without Magna-Power IS WORN OUT!

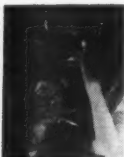


#### SUMMARIZING:

Normal wear, as you know it, does not exist. Manufacturer's figures are increased up to 10% in economy, speed, power. Engine wear life is increased to at least 300,000 miles by adding the Magna-Power Acid Neutralizer. Magna Power will help any engine which uses less than 1 qt. of oil each 500 miles, OR YOUR MONEY BACK.



At left above are two cylinders of a milk truck at 65,000 miles with Magna-Power. It is 1/4 worn out. Identical engines in the same fleet but without Magna-Power wore out completely at 40,000 miles. At right are shown several large city buses—part of the extensive fleet testing program that is proving more and more each day the amazing truth about acids in your engine.



When your oil is changed, your mechanic replaces the drain plug with a Magna-Power acid neutralizer for complete and permanent protection.

The gasoline you buy has sulphur in it. When sulphur burns it forms sulphuric acid. Sulphuric acid eats metal. Little by little your engine is eaten away. To combat this damage, many oil companies are now using anti-acids in their oils. But what happens when these compounds are overcome? Your engine corrodes once more!

Acid is one of nature's methods of reducing refined metals to their original primitive state. Even the Shell Oil Co. has now proven that acid corrosion is the major cause of engine wear!

#### There Is Only One Way to Safely Inhibit Acid Formation in Your Engine

Of course, if you choose to carry testing apparatus (litmus paper or some such other device) you might be able to tell when your oil is becoming acid, due to the destruction of the anti-acid compounds. But the easiest way, it seems to us, is to use a metallic plug of aluminum and magnesium, which is by nature an alkaline metal, and which, if attached to your oil drain plug, would permit of easy inspection at the time you change your oil. Thus you could see at a glance, by means of observing the state of corrosion of the plug, whether or not your engine is being attacked. For acids much prefer alkaline metals such as magnesium for "lunch," to the other metals in the engine.

#### This Is a Very Simple Idea

However, it was developed by a mechanical engineer only after many years of trial and error, using such compounds at first as potash, magnesium shavings and other devices, none of which were as easy, simple or positive as this new oil-drain plug device.

#### It Is Thoroughly Tested

Milk fleets, passenger cars, bus lines and trucking companies all have tested the new "Magna-Power" Neutralizer in controlled field operations. Their enthusiastic letters are available for your inspection at any time.

#### You Can See the Action in a Few Seconds

If you take a Magna-Power Neutralizer and drop it into a glass of vinegar, you will see it foam wildly. Even grapefruit juice will cause an effervescent action.

#### Experiment with the Magna Power Neutralizer at OUR Risk

If you are not satisfied with the way it works send it back, at any time, (years from now, if you choose) for an immediate refund.

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# Four-wheeled Four-poster

*You can have this folding bed and camp cooking setup for \$15 and some of your spare time*

A photo story by Cliff Prodger

**I**F YOU ARE ONE of the vast majority of today's sportsmen, you're taking an unprecedented number of weekend hunting and fishing trips. If you have battled tents, folding cots, sleeping bags, cookstoves and tables, tarps, windbreaks, and assorted other items of paraphernalia, you know that it takes one to two hours to set up a fairly decent camp. From time to time you may have suspected that there is a simpler, quicker, and easier way to get the most out of a sometimes damp and disagreeable Mother Nature.

The good old family car can be made into a completely comfortable camp with a minimum of time and effort. You can build this "camp-a-car" conversion for your club coupe or sedan without wasting trunk space or altering the seating arrangement and everyday appearance.

The bed will sleep two comfortably, or three if they are all good friends. Width of the bed is approximately 44 inches in most automobiles—three-quarter bed size. Its length, from deck lid to the front of the rear seat, is about 78 inches in coupes and 74 inches in sedans. If you need only the front seat for passengers, you can stow your camping equipment and make up the bed before you start your trip. Then a midnight arrival at the campsite is no problem—just turn off the ignition and hit the hay.

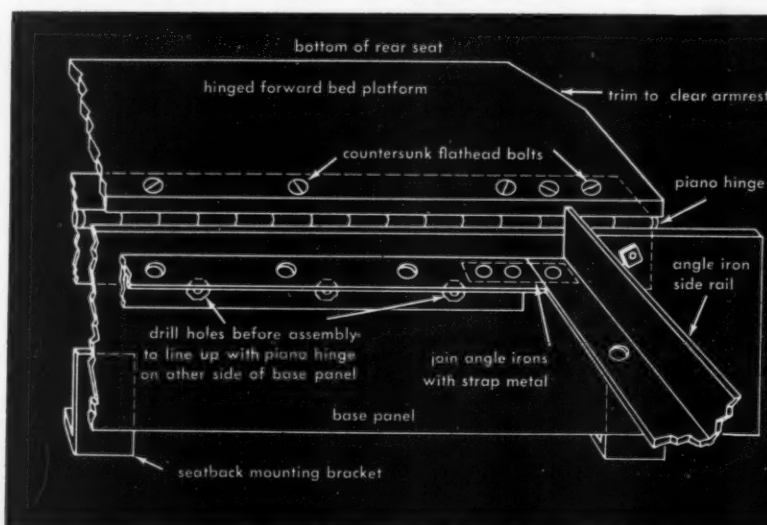
It's a simple matter to get the kitchen department functioning in the morning. Lift the deck lid and unfold the hinged extension table, supported by two chrome braces. Set the camp stove on one side, away from the gasoline filler pipe, and start the bacon frying. There is plenty of

room left on the 18- by 40-inch table for plates, cutlery, food preparation, and serving. The ground below the table provides a shady spot for a portable cooler. If you're going to leave your car for any length of time, it's a simple matter to stow the equipment and lock the car. Then, too, the rig is set to move to greener pastures on a moment's notice.

Anyone with a few basic tools, \$15, and 10 hours of spare time can build a "camp-a-car." These instructions are for 1949-51 Ford club coupes. The installation procedure is the same for all automobiles,

although some will require minor modifications. The tools you'll need include: drill (preferably electric), bench vise, countersink, screwdriver, small crescent wrench, hacksaw, and crosscut saw. If you don't have a power saw, you'll save a great deal of time and effort if you list the final dimensions before buying the plywood. Have it cut to size at the lumberyard. Your list of materials is at the end of this article.

The first step is removal of the spare wheel mounting bracket. In most cars, it projects inward from the wheel well.



**1** Most important procedure of the "camp-a-car" conversion is the installation of base panel and hinged forward bed platform. Plan steps before drilling and cutting

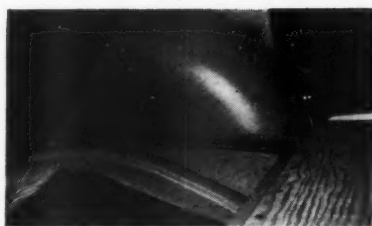
The spare tire must be flat on the trunk floor. Place it as far to one side as possible and mark the center point of the hub on the floor, away from the gasoline tank inspection cover. If the center point falls on a crossmember or frame brace, you're in luck; if not, you'd better install a section of U channel on the underbody to keep the floor from buckling when you bolt the tire down. Use a self-retaining nut on the underside of the brace to take a tire mounting bolt. First, bolt the channel to a solid part of the frame; second, drill a hole for the tire bolt; third, install the self-retaining nut. It may be possible to adapt a brace and retainer nut, like those on earlier-model Chevrolets with a horizontal tire mount. You may have to lower the gas tank on its straps for access to the underbody.

Next step is removal of the rear seat-back. It is bolted to the floor at two points, through a bottom flange, and held at the top by two hanger brackets. You can reach the bolts by moving the seat a few inches forward. Then slip the seat-back up and out.

The last obstruction to the bed runs from the rear window shelf to the floor. In most cars this brace is spot-welded to the shelf flange and bolted to the floor. Cut it about five inches above the drive-shaft tunnel. Drill out the spot-welds (small indentations in shelf flange and brace) and remove the brace. Saw off the two seatback mounting brackets flush with the shelf flange.

In place of the brace, install a plywood panel; it is hinged to drop forward on the seat base, and forms the forward part of the bed. There are only two critical considerations in locating this hinged panel and the bed platform itself: First, the platform must clear the spare wheel, now

(Continued on page 66)



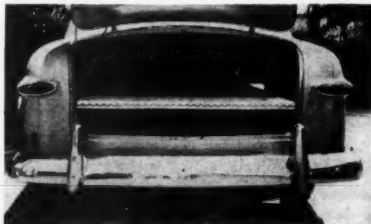
**3** Rails should be level when bolted to the wheel wells; place the rails about one inch above top of the axle hump where it joins the sides of the wells



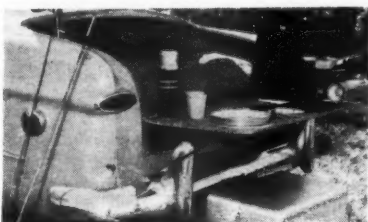
**4** To allow rear plywood panel to clear the sides of the deck lid opening, notch the rails about 10 inches from the end and bend them toward center of the car



**5** Use well-countersunk flathead screws, and sand edges and corners for smooth platform surface. In this photo, hinged panel is resting on bottom of rear seat



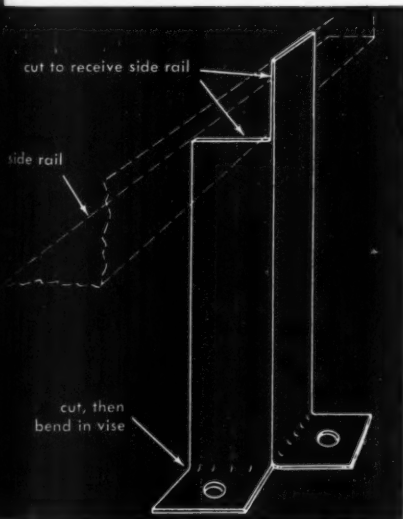
**6** Little trunk space is sacrificed with "camp-a-car" installed. Table rests on the rear bed section when not in use, spare tire is carried beneath platform



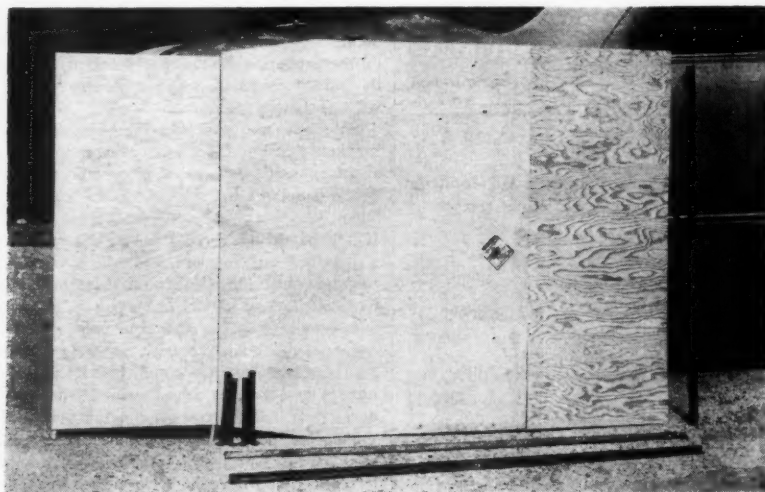
Chrome braces support 18- by 40-inch hinged table. There's plenty of room for plates, cutlery, etc. Warning: place stove on side away from gas filler pipe



And so to bed! A midnight arrival at your campsite is no problem—just turn off the car lights and ignition, set your alarm clock for 5 a.m. and hit the hay



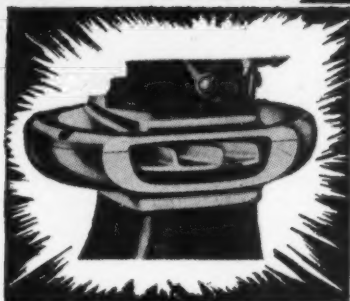
**2** Legs support side rails; height should be about seven inches to clear tire



Plywood platform will look like this before installation. Hinged forward panel (not shown) becomes a permanent seatback support when not used as a bed section



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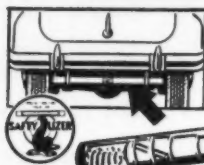


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mounted on the floor. Second, there must be enough room between the platform and the rear window shelf for air mattress, bed coverings, and you—14 inches is about minimum.

Locating the angle irons that provide side support for the main plywood panels is largely a matter of sighting by eye. Place the two 53½-inch lengths of the ¾-inch angle iron in the general positions shown (1). Cut the legs from another piece of the same stock and place them in position (2). They support the angle iron at about a seven-inch height (enough to clear the average tire; larger tires may require more clearance). Sight along the angles. The side rails should be level when they are bolted to the tire well about one inch above the top shoulder of the axle well where it joins the tire well (3). Regardless of variations in other makes and models, it is vital that the forward end of the side rails be slightly higher than the rear of the back seat and slightly lower than the front of it. When the folding panel is down (resting on the seat) it should slant slightly upward.

Now that you have located the side rails and marked their position for attachment to the wheel well, you will notice that they are wider than the deck lid opening. With the rails in this position, the rear plywood panel would not clear the sides when lifted for access to the spare wheel. To avoid this, mark the lower flanges of both angle irons 10 inches from the rear ends, remove them, and cut a notch ¾-inch wide at the mark, then bend each angle iron toward the center line of the car (before installing the side rails, weld the notches). When they're replaced, be sure that they clear the deck opening by at least ½ inch. When you've cut the plywood to fit the framework, angle it inward in this manner (4).

Find the best position for the rear legs on the floor (about four inches from the end of the side rails) and weld them to the side rails.

The fore and aft position of the side rails is determined by the seatback's folding panel. A plywood panel that is cut to 46 by 7½ inches should come within ¾ inch of the top of the side rails (1). This is necessary because the upper (folding) panel is hinged on the forward side. When you fold it down, its ¾-inch thickness will put it on a plane with the main platform.

Bolt this base panel to the seat support brackets that you cut. It should be in vertical alignment with the rear window shelf in order to provide a flat surface for the seatback when you install the hinged upper panel. If it is not in line, bend the brackets fore or aft, as the case may be. Pull the side rails forward until they touch the back of the base panel. You can now bolt them to the wheel wells—but be sure their side flanges are ¾ inch above the base panel to allow for the thickness of the wood. Check the side rails to be sure they are parallel all the way back, then bolt the rear legs to the floor.

The base panel supports the bed platform at the front. Cut a 42½-inch length of angle iron and clamp it to the back of the plywood panel, flange down. Its other flange should be level with the bottom flanges of the side rails. Cut a 44-inch length of piano hinge

and clamp it in position on the forward side of the base panel. This permits drilling and bolting angle iron, plywood, and hinge in one operation (1). Use a piece of strap metal on the underside of the angle irons to bolt the corners together.

Install the hinged panel with flathead screws. Cut it from ¾-inch stock to approximately 54 inches wide and 15½ inches high. Drill three holes through the plywood and the window shelf flange. Install plate nuts on the back of the flange. (Bolt the folding panel to this flange when the car is not being used for camping. It will substitute for the brace that you removed.) Bolt two new seat-back mounting brackets in position on the plywood panel so you can install the seat back in the customary manner when you want to.

Next comes installation of the two ¾-inch plywood panels for the bed. The rear panel (the largest platform section) is hinged for access to the spare tire (4). Placing the hinge point is a matter of personal choice (just aft of the axle well is a good spot). Cut a piece of angle iron to fit between the outer flanges of the side rails—approximately 43¾ inches. Use flathead screws to bolt it laterally between the rails, bottom flange toward the rear.

Apply the sponge rubber weatherstripping to all support flanges in the platform, with the exception of the hinge point angle iron. Cut a piece of plywood to fit the forward section (approximately 17¾ x 43¾ inches) and bolt it to its frame with flathead screws. Drill several holes through the angle iron behind the panel and bolt the angle iron to the plywood with flatheads screwed into the rear edge of the panel. Fit the rear panel to its frame and use three strong hinges with their flanges screwed into the front and rear panels, and you have finished the bed platform (5).

Cut the folding table 39 inches wide and about 18 inches long. Use flathead screws in the piano hinge attaching the table to the bed. Use two chrome rods to support the table and drill two bolt holes through the rear bed panel and side rails near the aft end. Use wing nuts on the bottom of the flange to keep this panel from rattling (arrow, 4).

That's about it! You'll probably think of modifications and improvements as you go along. The main thing to remember is to use well-countersunk flathead screws whenever possible; that way you'll eliminate the problems of fitting the various components together. Round off all sharp corners to save your air mattresses. The construction may sound complicated, but you'll find that the bed frame goes together quickly. For a professional-looking job, sand and varnish the panels.

### What You'll Need

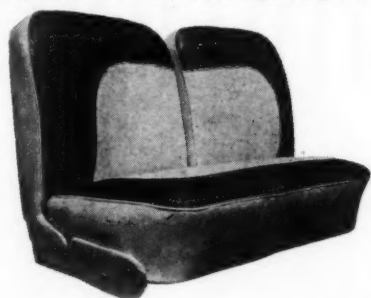
- Two ¾ x ¾ x 53½ in. angle irons for side rails
- Two ¾ x ¾ x 9 in. angle irons for support legs
- One ¾ x ¾ x 33¾ in. angle iron for cross-brace and hinge member
- One ¾ x ¾ x 32½ in. angle iron for crossbrace at seat panel
- One 72 x 48 x 5/8 in. plywood panel
- One 60 x 24 x 3/8 in. plywood panel
- One 39 x ¾ in. steel piano hinge (1½-in. spread)
- One 44 x ¾ in. steel piano hinge (1½-in. spread)
- One roll sponge rubber weatherstripping
- One tube weatherstripping cement

## Those Shocking Seat Covers

(Continued from page 29)

scope of patterns is as unlimited as your imagination.

Although not every upholstery shop or department store will stock crazy and unusual patterns, you can find what you want if you take time to visit the many shops specializing in seat coverings. Shopping around is a good idea in any case, whether you intend to buy a conservative pattern or a wild design. Compare prices, materials and the difference between the ready-made type and the tailored, custom type. Most reliable shops will welcome your inquiries, and will probably explain to you that buying seat covers compares closely to the purchase of a new suit. If you expect a perfect



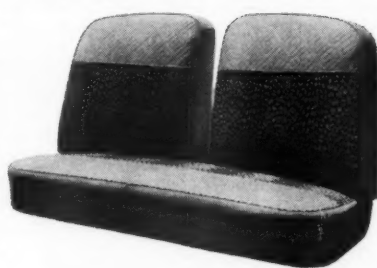
Striking two-tone plastics, embossed or plain, can create a custom appearance

fit in a suit, you'll pay more for a tailoring job than you would for a ready-made suit; by the same token, you'll pay a little more for custom-made seat covers.

Few men are physically identical, yet many men wear the same size shirts and suits. The same applies to car seats; no two sets of seats are identical when they roll off the assembly line, yet you can buy inexpensive, ready-made seat covers styled for all cars of similar make and model. The most important advantage to buying tailored seat covers is that the customer is allowed a choice of material and design. Furthermore, when buying custom seat covers, the buyer can have the theme carried out in door panels and headlining.

When cost is the governing factor, the consumer will find prices to suit any income. Materials, quality of workmanship and labor costs determine the price of seat covers; for a four-door sedan they can cost from less than \$10 to as high as \$200. At nationwide retail stores, "ready-mades" for four-door sedans average from \$20 to \$45. At top-flight upholstery shops, fitted seat covers cost about \$45 for a "standard" job, and for the piped and rolled job—truly custom upholstery—the price is about \$175.

If you're intent on saving money on materials, find out the difference in the cost of woven fiber and plastic. These materials offer a good example, for the price of the finished product will vary as much as \$10 or more.



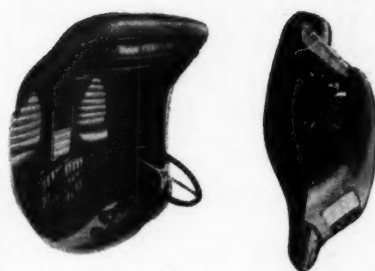
Imitation "animal hides" are often blended with plastic for new, different effects

In spite of its lower cost, fiber has lost popular favor in the past few years. Probably one of the most practical seat cover materials, it has found limited use as a custom seat cover material. Unlike plastic, it will not generate static electric shocks, does not get hot in direct sunlight, and offers just the right resistance to movement. Out-sold 30 to one by woven plastics, fiber is generally considered to be short lived by comparison to the more popular material; but most upholsterers will admit that this is not true. Woven fiber is durable in use and has been known to last indefinitely with no more care than that given to other woven materials.

Before you decide on what materials and designs you want, first consider precisely what you expect of seat covers. If you are buying a new car, for instance, are you going to install seat covers to protect that \$300 factory upholstery? If that's the case, don't be fooled into believing that a woven fabric seat cover will give complete protection against dust, stains, or fading. If you expect this kind of protection, choose a solid vinyl-coated fabric, better known as imitation leather or leatherette. This material is more expensive, and may be uncomfortable in hot weather because it lacks the "breathing" qualities (ventilation through the material) of the woven materials. The plastic or vinyl-coated fabrics are the best for points of wear and abuse. However, be wary of solid plastic without a fabric backing, which is not too sturdy. A few such materials are on the market, but most seat cover shops will not recommend them, in spite of the fact that they may stock such items to satisfy the buying public's desires.

Probably the most common reason for buying seat covers is that the original upholstery is beginning to show signs of wear; with seat covers, it is possible for the owner to re-cover the seats and gain a certain amount of new-found pride in ownership. If you're going to put seat covers on your car—be it old or new—don't be shy, be shocking! It's not hard to find seat covers that will do just that—in more ways than one.

—Felix Zelenka



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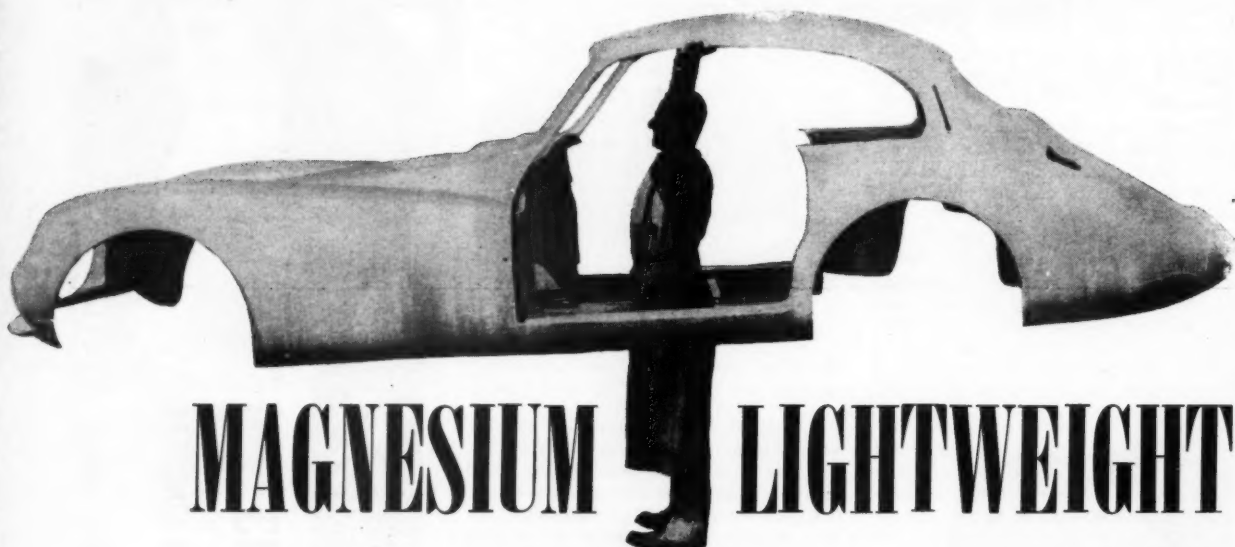
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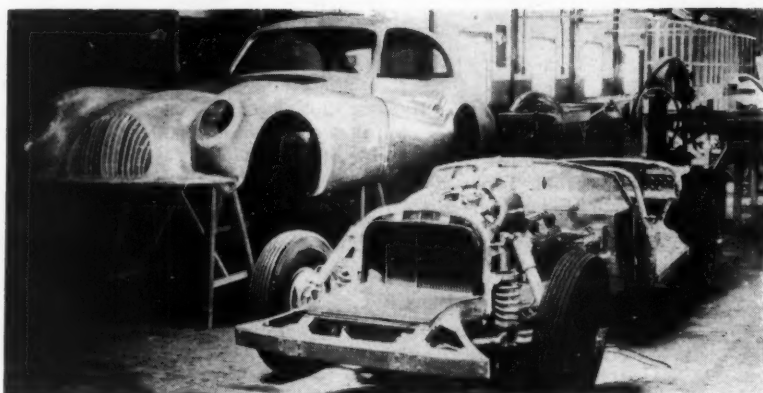
# MAGNESIUM LIGHTWEIGHT

By Maxwell Boyd

Photos courtesy Essex Aero Ltd.

**M**AGNESIUM is the third most abundant structural element in the earth's crust, and the raw materials from which it can be obtained commercially are widely distributed and may be considered inexhaustible." So states the 1953 *SAE Handbook*. It's only natural that someone in the automotive industry would take the lead, and build a complete body, using this super-lightweight material.

The considerations leading to the design and construction of this car were to provide a vehicle with outstanding performance (particularly with respect to acceleration), of the sports, or semi-racing car class, combined with the comfort and weather protection of a closed car. In the interests of performance, the body had to be of aerodynamic form, and pleasing in appearance, as well as practical; but whatever it was to be, it had to be light in weight. Most body-builders would probably have answered this demand through



*The basic Allard J2X chassis was altered by repositioning rear shocks, lengthening frame front and rear. Air ducts leading to twin carburetors are made of magnesium alloy*

the use of Fiberglas, or even aluminum, as the body material; but the British builders who designed this car chose another medium—magnesium.

An Allard J2X chassis and its Ardun-Ford ohv V-8 engine were used as a basis for the car. Before the body could be considered, chassis modification was needed. A light alloy structure added two-

feet, nine inches to the rear, and another foot was added between the front seat and the rear wheels. The floor level was dropped two inches below the top of the frame, and the rear shocks were re-positioned to allow more interior space.

So far, the pre-building format had been followed, but the car was slightly larger than its Allard counterpart, and would eventually be heavier, when completed. The first major weight reduction was gained by replacing the 39½-pound steel gas tank with a 24-gallon magnesium tank weighing only 15½ pounds. Again magnesium was given the nod, and when the body parts were welded together into a rigid unit, the resulting basic body shell weighed a mere 132 pounds. The body was designed to be removed quickly for access to the chassis and engine, and incorporated into this body shell are the doors,



*Completed Allard has clean, sweeping lines. Entire body, including doors, windows, rear seats, top of dashboard, and grille, weighs 395 pounds; chassis, a ton*

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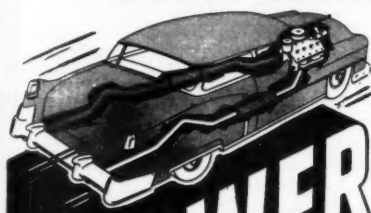
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windows, grille, part of the dashboard, headlights, and rear seats; but even with these added, the body weighs only 395 pounds, because of the use of magnesium alloy in the doors, grille, hood, rear deck, and the seats, which are welded to the trunk floor and body sides for maximum strength. Completely assembled, the car tips the scales at 2583 pounds. This is only a few pounds lighter than an open, two-seated Allard, which has none of the roominess or luxury appointments found in the magnesium-bodied version. For this is not just a handsome coupe. It is a true coachbuilt car.

Magnesium, while not as widely used as steel, iron, aluminum, or other metals, cannot be considered a rarity. A common source for magnesium is sea water, and the metal can be extracted efficiently from natural brines or the common minerals magnesite and dolomite. Aluminum, recognized by automotive builders everywhere for its lightness, is 50 per cent heavier than magnesium. The heavier metals, such as iron, copper, and zinc, are about four times heavier.

Magnesium is a versatile metal, and can be formed by any of the common methods used in metal-working, such as drawing, pressing, spinning, and bending. Its melting range is similar to that of the aluminum alloys, and it can be worked easily at about 300-750° F. Gas, arc, and electric-resistance welding, as well as bolting and riveting, can be used to join magnesium. Paint coatings are recommended only in humid industrial or marine atmospheres, for magnesium is particularly corrosion-resistant (it resists oils and alkalis; it will not stand up under constant contact with water, or water solutions, but protective measures have been developed which protect the metal against intermittent contact with water).

Magnesium alloys are available as sand castings, die-castings, or as permanent mold castings. Wrought-magnesium alloys come in many shapes, including rods, tubing, forgings, rolled plates, and sheets. Angles, channels, and beams are available in a multitude of special shapes and sizes — and, should you have forgotten, after reading over all of the characteristics of magnesium — no matter what its shape, it remains light in weight. That's the important thing to remember.

Here, then, is an automobile with a magnesium body — visible proof of what can be done with "the third most abundant structural element in the earth's crust." Is this special-built Allard just a "shot-in-the-dark" attempt to get away from the usual pattern of customizing and body-building? Is it just an experiment in construction methods, rather than with materials? Or is it the beginning of a trend that may eventually engulf the automotive industry in its stride? Should more magnesium-bodied cars be unveiled, either here, or abroad, our questions may be answered.

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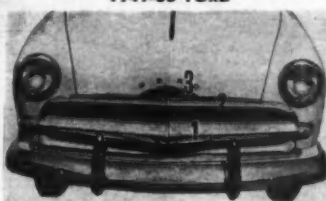
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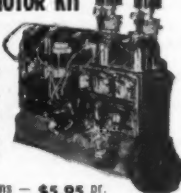
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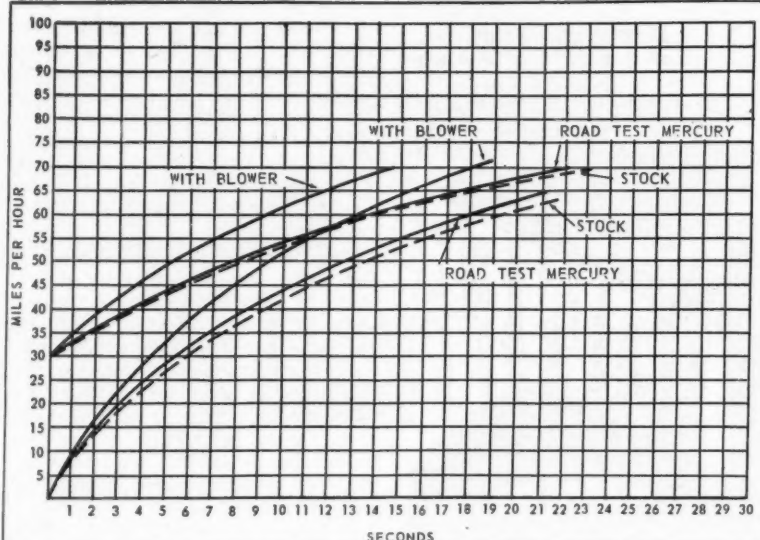
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## Supercharging Made Easy

(Continued from page 25)



Figures show increase in performance of '52 Mercury. Road test car was MT's '53 Merc

of McCulloch's own specification, it has rotated at speeds of 75,000 rpm without failing. This provides a safety margin of better than 100 per cent.

McCulloch supplied MOTOR TREND Research with three test cars: a '52 Mercury four-door sedan with Merc-O-Matic, a '51 Ford convertible with overdrive, and a '53 Nash Ambassador hardtop with Hydra-Matic.

All the cars started easily, idled smoothly, and ran the entire rpm range with just the slightest whisper of what was under the hood.

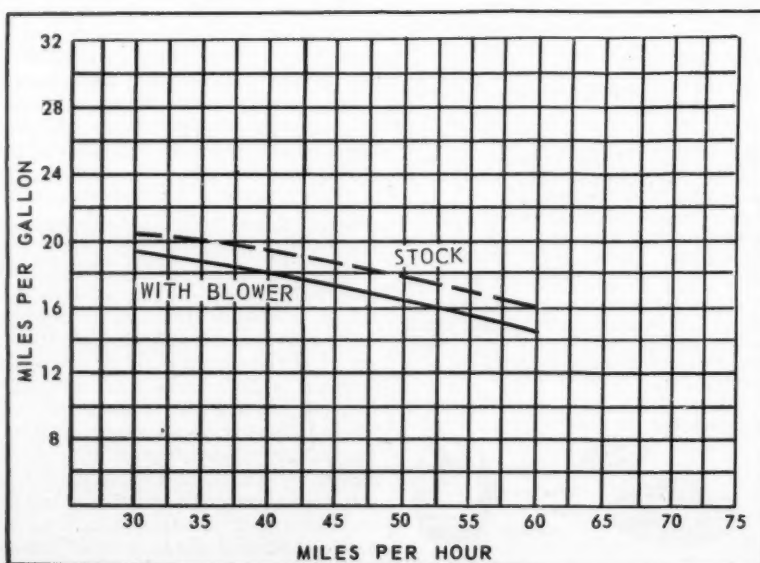
Throughout the entire speed range, the cars had a feeling of "go," proving McCulloch's claim of constant performance regard-

less of their stock characteristics. If the cars had any tendency to "flatten out" around the 70-mph mark, the supercharger went to work and eliminated it.

We carried out our most comprehensive tests on the Mercury, but the Ford and Nash supplied corresponding positive results with the McCulloch supercharger.

Its developers have installed the supercharger on practically every make of American car with excellent results. If McCulloch can meet the target price of under \$175, it will probably be the most successful performance accessory that anyone has put on the market for years.

—Dick van Osten



Fuel consumption checks (also on the '52 Merc) indicated a rather small difference

## (Continued from page 51)

Equipping a classic with a modern push-button radio, spotlights, or fender skirts (yes, we have seen it!) destroys the original illusion created by its designer and its value as a collector's item. Accessories manufactured during the era when the car was built are always permitted, even if they were not original equipment, for they were generally designed to blend with the original lines.

An 85-hp Ford V-8, supplemented by a McCulloch supercharger, has replaced the original Lycoming V-8. As a result, the original exhaust stacks no longer serve a useful purpose and the Ford engine breathes through twin exhaust pipes which terminate beneath the rear bumper. The drive train consists of a '40 Ford transmission coupled to a '40 Chrysler rear end by some clever machine work. The original front-drive front end has disappeared and a '46 Studebaker front end is in its place. The steering assembly and column shift are also Ford, while General Motors is represented by the rear bumper and taillights from a '41 Pontiac. The body changes are not as extensive. The gasoline tank filler neck has moved inside the turtleback from its original position. The car has sprouted scaled-beam headlights and the cockpit discloses a dash made of pressed wood, a Motor-Minder in place of the tachometer, and tan plastic in lieu of leather upholstery.

We leave to the reader the determination of the car's classic appeal in its present form. Its owner, fully aware that it is neither a Ford nor a Cord, states that he intends to restore it—by installing a Cadillac engine!

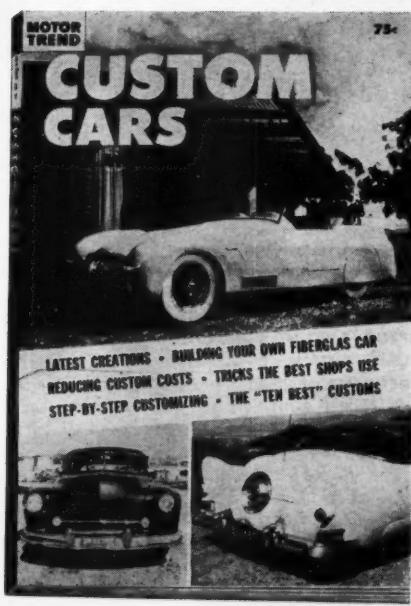
—Robert J. Gottlieb



October 1953

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— Robert Lee Behme

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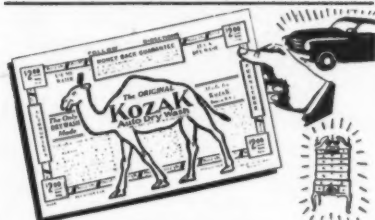
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## "999"

(Continued from page 33)

an automobile not only reached, but (aided by a tailwind) exceeded, 90 miles per hour for the first time in motoring history. Upon further reflection, and a glance or two at its magnificent surroundings, this same well-preserved oldster would undoubtedly be glad to share the laurels with its driver of the day, Henry Ford.

A hundred or so people had gathered on the ice of Lake St. Clair in Anchor Bay, just off the shore of New Baltimore, Mich. AAA officials had marked off a three-mile straight course, and had scattered cinders in some spots where they considered the ice too slippery for good traction. The timers stood at the beginning and end of the third mile with their checkered flags and stopwatches. Ford and his "mechanician," Spider, were down at the other end with 999, getting ready for their two-mile flying start. They worked feverishly with a plumber's torch to warm the cold manifold. Some anonymous hero volunteered to crank, and when the engine caught, the cough of the four great cylinders carried for miles through the crisp air. Spider climbed into position on the frame alongside the engine. His principal duty was to hold the throttle valve wide open, for they had found from experience that the car bounced too much for the driver to keep his foot on the accelerator.

Willing hands gave them a push, Ford engaged the clutch, and they were off. All four cylinders worked regularly for a change and the machine, gathering speed, slithered down the course toward the starting flag. Every time it hit a bump, all nine-feet-four-inches of car would fly into the air. The running broad jump record for automobiles must have been made and broken many times during that run, but no one bothered to measure it, least of all the two occupants. They were languishing for dear life, and they entered the 15-foot lane in the third mile like a flock of panicked penguins. Ford's take-offs and landings had been pretty smooth until he hit a particularly vicious bulge along the timed mile. The car took off in a flight that looked like its last, but a snowbank intervened. For a breathless second nothing could be seen but a dense cloud of smoke, steam, and snow. However, God, Ford, and Spider had somehow kept the machine upright and headed in the right direction. They crossed the finish line, but it was no time to relax: there was nothing but ice and a set of 1902-model mechanical rear-axle brakes between the car and the ice-bound schooner, *Gari-baldi*, dead ahead. The schooner loomed larger and larger, and it was obvious that something had to be done.

In keeping with the aeronautical character of the run, Ford expended his last pound of energy on a desperate attempt to ground-loop the car. He succeeded in altering their course and, when their world finally stopped spinning, Ford and Spider, to quote the next morning's *Detroit Tribune*, "looked a bit pale." Men and machine had traveled a mile in 39.4 seconds, a world's record. The same journal, with waspish Victorian iso-

lationism, remarked: "The kilometer was to be attempted as well but the danger was so great it was left to the French who invented it."

Cooper still owned both the record-breaker and the yellow Arrow. One would think they would have been his most prized possessions, but for some reason obscured by time he sold them to an Alabamian named Tom Pickens for an undisclosed sum. Pickens planned to tour the country with the cars, taking on all comers in races, and generally cash in on the fame achieved by 999. The press of the period was full of Pickens' plans and the various other pronouncements of a typical promoter-turned-publicity-man, making it hard to sort fact from fiction.

He did travel the country extensively with the cars, but bad luck plagued him to the extent that his story reads like Horatio Alger in reverse. The Arrow was wrecked while racing in Milwaukee, and the remains somehow found their way to the junkyard in back of the Ford factory. Pickens and 999 ended up in Salt Lake City on the county fair circuit, both broke—one from lack of money and the other from lack of care.

It had been Pickens' practice to hire the local strong man to drive the car. In Salt Lake, the crowning blow came when an expug crashed 999 into the guard fence, causing extensive damage to fence, driver, and car. Meanwhile Barney Oldfield had arrived in town; he bought the wreck and sent the Southerner to Los Angeles along with the crated car. The trip must have been invigorating, for Oldfield received a \$140 bill for the supposedly prepaid shipment. This was the last straw, and the car went under the railroad auctioneer's hammer.

It caught the eye of a Californian named Dana Burk, who towed it home to Ocean City. Not much of a handyman, Burk hired Bruno Seibel, a German mechanic who still had Daimler-Benz grease on his hands. For some unknown reason, the rebuilding was never finished. Nostalgic Barney heard of 999's plight and came prepared to repurchase it, but even he quailed before the sight of dry rot and twisted, rusty steel, and left empty-handed, to devote full time to his tire business in Los Angeles.

The motoring world and the Edison Institute Museum can thank a San Francisco Ford dealer, William L. Hughson, for rescuing 999 and restoring it to its present fine condition. Hughson's labor was one of love, for by that time faster cars had been built, and like Man O' War, the great red racer was destined to spend the rest of its days watching its progeny eclipse its records but never its fame. Like Man O' War, 999 continued to earn its keep. Unable to stand at stud, it contented itself with helping to sell cars for Hughson until Henry Ford coughed up many dollars and moved it to Dearborn, where it now plays host to an average of 500 visitors daily.

Shortly before his death, Ford is supposed to have remarked to Oldfield: "You made me and I made you." The great Barney shook his head and said: "999 made both of us." No finer tribute could have been paid to the great red car.

—Donald MacDonald

STAR OF UNIVERSAL-INTERNATIONAL'S  
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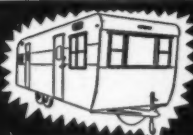
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Seventy-four

## It Could Happen to You

(Continued from page 23)

a minimum of extra finishing, most companies will insure the car for collision and comprehensive insurance, but if the car is mostly handmade, the companies will not insure it for anything other than bodily injury, property damage, and medical coverages.

Their reasoning was summed up by an official who said, "Collision and comprehensive policies are not high premium policies. If a fender panel is damaged on a stock car, it costs about \$35 to fix and the company stands to break even, but to repair the same damage on a custom could cost as high as \$100, yet our premium remains standard."

"Why don't companies charge the custom owner more for his collision and comprehensive to provide them with this protection?" he was asked.

His answer: "Couldn't be done."

A few companies do cover customs for a major portion of their value. These companies are those who offer a "stated amount" policy. The owner presents an impartial estimate of his car's true value, and the car is insured for that figure.

Some foreign cars also come under the restrictions of policy writers. Most foreign cars are readily accepted by all insurance companies, but a few cars—those made in factories which do not provide a ready parts warehouse in America—are not so easily insured for collision and comprehensive. One insurance company explained its views this way: "Our policies are sold on the idea of fast, speedy adjustments. When a car has been damaged, we move right in to restore the car. Some foreign cars are harder to repair. The owners are forced to wait for several months while the parts are shipped from

the factory. Rather than face the owners with daily explanations for our delay, we prefer not to insure the cars."

American or foreign, stock or custom, the exact coverages of policies differ between companies, but they differ even more between offices of the same company operated in different states. The reason is due to the individual state requirements. The coverage which any company can write and the wording which must be used is regulated by an insurance commission in each state.

For example, one state requires that collision and comprehensive insurance be written to provide that in the event of a total loss, the policy holder is paid off on the value of his car at the time it was insured. In another state, the same company pays its total losses "in like and kind" at the time of the accident.

To sell any type of insurance within a state, a company must be admitted to do business by the state's insurance commission. Because a company is not admitted to all 48 states does not mean that the company is not good or that its policies are not adequate. It is not the number of states to which a company is admitted which governs the quality of a policy, but the integrity of a firm. A company doing business in a specified state is empowered to insure its policy holders in every state of the Union as well as areas outside the continental limits of the United States.

Companies which are admitted to do business in all 48 states do have one advantage. They can make claim adjustments faster and easier than companies with offices which are farther away.



BRAD ANDERSON

"... and it's got automatic shift, automatic signals, automatic headlights, power steering, power brakes . . . I feel so useless!"

Motor Trend

October



If a driver does much traveling between states, he might well be better served by a company that does have offices in all principal cities. He would never be far from an adjuster when he needed service.

Most policies written in any state are written on a "standard form." This provides the insured with complete coverage without any additional premiums, unless directly specified. A few companies write their policies on "deviation forms." These can often stick the policy holder for additional fees should an accident occur. To get the most out of every policy dollar, the policy should be checked before it is purchased.

Insurance is like all other commodities today—"bargain specials" are less of a value than higher-priced "quality" policies. The first line companies charge rates which are based on statistics, and which offer them a small margin of profit. They try to accept drivers who offer some prospect of showing that profit. It is the underwriter's job to set the rates and check the applications for "good" and "bad" risks.

These underwriters check each policy application. They study each form for a justification of the amount of insurance requested, the stability of the applicant, and the past record of the individual. No insurance company expects to get "risk-free" policy holders. They are willing to take their chances, but they want to do it according to prescribed statistics.

Most drivers are readily insurable, but there are two types who do not fit into the scheme of insurance statistics. The first is the "shotgun" risk and the second is the "recent major accident" risk.

The shotgun risk is a driver who continually becomes involved in small accidents. Insurance statistics, the bloodstream of the underwriter, tend to prove that the shotgun risk will get caught in a big accident some day. When that happens, thousands of dollars worth of claims descend upon the company.

The second bad risk is the "recent major accident" risk. He is a fellow who has recently been involved in a serious accident. To the layman it would seem as if this fellow might take that as a warning, but statistics prove that this is not the case.

"Once a driver gets involved in a serious accident," an underwriter said, "he is far more apt to get caught again than the fellow who has never been involved in an accident."

The insurance underwriters double-check their applicants, and the applicants should double-check their insurance just as thoroughly. When a driver purchases a policy, three factors should guide him in his selection: company, coverage, and claim service.

Whatever company is chosen, be certain the policy covers the present and future of the holder. When a policy is purchased, take advantage of its every protection and keep it in effect by meeting every requirement. Lock the car when it is parked. Report all claims immediately and keep the brakes and other mechanical equipment in safe condition. An insurance policy is like money in the bank. Don't sell it short!

—Robert Lee Behme

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49-53 Ford

49-53 Chev



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Buick	35-41, 50-53	Stude	35-52

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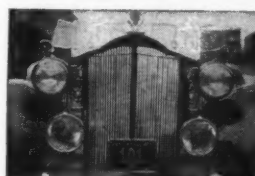
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Seventy-five

# The Facts About

# a New Brake

An MT Research Report  
By Bob Hoepfner

*Will the Catton brake replace conventional braking systems?*

IT'S AN ACCEPTED and unfortunate fact that modern trends in design have hampered the efforts of our brake designers to keep up with the nearly phenomenal performance gains of our post-war cars. In the past, brakes were quite large, considering a car's weight and speed; it was not uncommon to find brake drums nearly 15 inches in diameter on cars that weighed 3500 pounds and were capable of speeds near 60 mph.

Now, however, the trend toward larger tire sizes has reduced wheel diameter from over 20 inches to the popular 15-inch wheel size, thus reducing brake drum diameters to an approximate average of 12 inches. Wide, low-pressure tires, and the shrouding effect of modern fender styling have all but eliminated the air flow so necessary for proper brake cooling. Does it seem logical to call upon these brakes to stop a car that weighs over two tons? Present braking systems are highly effective units, but they are working under extreme handicaps; their limits are easily exceeded in normal use—a few hard, fast stops at high speeds or a drive through hub-high water puddles will do the trick.

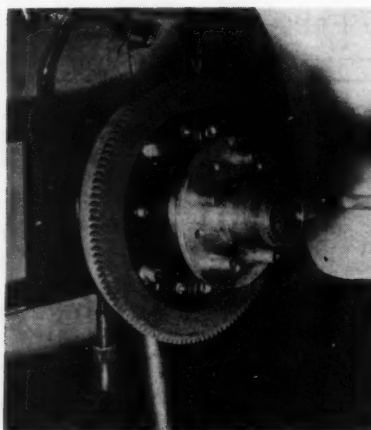
A new development by the Catton Disc Brake Company of La Cañada, Calif., offers the possibility of an increased safety factor for our production cars, for preliminary testing has shown that the new brake can alleviate or eliminate many of the problems arising from the use of ordinary shoe-type brakes. The Catton disc brake claims many advantages over the conventional brake. It is lighter by six pounds than a standard Ford brake assembly; this will improve the unsprung weight ratio. The danger of brake fade can be practically forgotten, for expansion will not affect the relationship between the lining and pressure plates of the disc brake. The self-energization of the shoe-type brake is not utilized in the action of the disc brake,



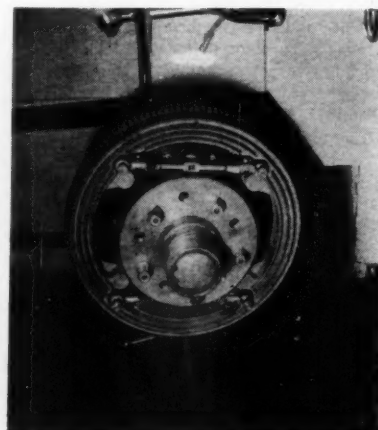
Thomas R. Catton, left, briefs sports-car builder Frank Kurtis on the simple assembly and operation of the new disc brake



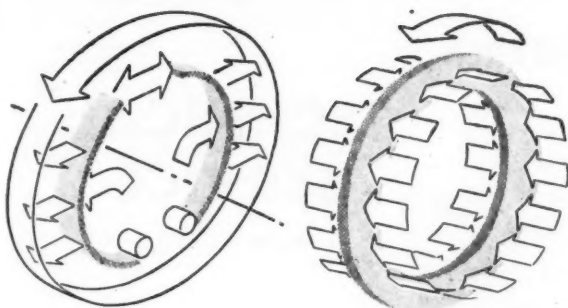
Initial assembly shows backing plate and inside stationary aluminum pressure ring



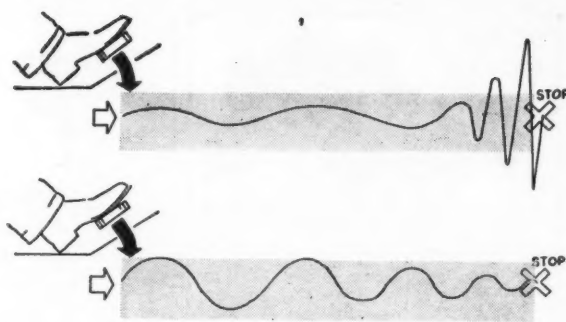
Protruding lugs (with springs) position back plates. Lining ring is now in place



Outside backing plate covers lining. Operating levers are activated by cylinders



Graphic illustration shows how disc brake, using pressure plate rings, achieves more than twice contact area of shoe type



Self-energization principle of shoe-type brake (top) is absent in disc brake. Erratic pulling is eliminated, stops are smoother

thus eliminating the erratic pulling effect caused by a change of coefficient of friction in the various linings. The Catton brake has more than twice the contact area of the average brake but uses less than one-half the number of parts. It boasts of less abrasive action when the brake is applied; foreign matter, oil, or water are eliminated from contact faces by centrifugal force.

The brake assembly consists of two pressure plate rings mounted on a backing plate by four equally spaced lugs. While the inner ring is stationary, the outer ring is free to move in and out on the lugs; this allows a squeezing action to be applied to the rotating lining disc between the two plates. The pressure plate rings have a cast iron face plate, backed up by a well-ribbed, aluminum-alloy mounting ring; the two parts are bonded together by the Al-Fin process. Two single-acting hydraulic cylinders (the brake can be activated mechanically, hydraulically, or electrically), mounted laterally on the aluminum backing plate, activate the outside pressure ring through levers and an equalizing link. A mechanical advantage is gained by placing the fulcrum point of the levers close to their outside ends; this allows greatly reduced line and pedal pressure.

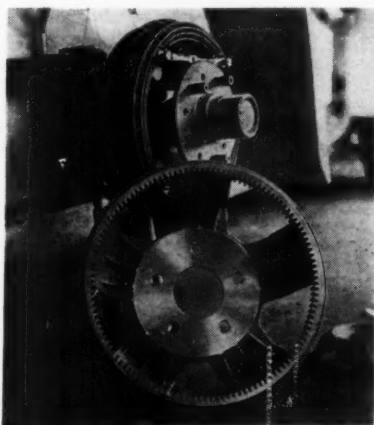
The molded brake lining, or friction disc, rotates with the wheel; made of solid, rivet-free lining material, it is held in position by a flanged extension of the wheel hub. The lining disc has gear teeth around its outside edge (later models will use a notched, or splined-type pattern), which engage a similar pattern on the inside of the flange rim. The friction disc is free to move in and out, within the limits imposed by the faces of the pressure rings.

In operation, the application of the brake pedal forces the hydraulic cylinder pistons outward; this motion is reversed by

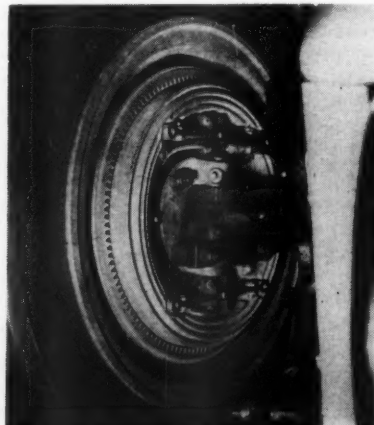
the levers tending to rotate around their attached points at the clevis pins, forcing the outside pressure ring into contact with the lining disc; this disc, in turn, contacts the stationary rings, and the "squeeze-play" is in action. Braking forces are transmitted from the lining disc to its locating flange, which in turn effects braking power on the wheel.

The brake's effectiveness on an American stock car was recently tested by a reliable testing organization at Catton's request. Briefly, these tests showed that compared to the stock shoe-type brakes, the disc brake had faster deceleration, brought the car to quicker stops, and required less pedal and line pressure. The brake's anti-fade characteristics were indeed outstanding, for no fade was encountered during the standard 10-stop fade tests. The conventional brake fades out completely after the fourth, fifth, or sixth stop (depending on the severity of the test), with no complete recovery.

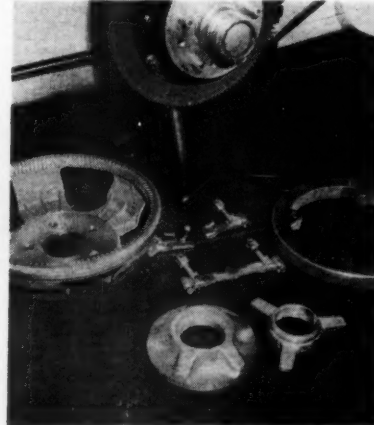
The Catton brake has shown its worth on the proving ground, but what about its value in actual use? Sports car racing may supply the answer. Frank Kurtis, quick to realize the advantages of the disc brake, has completed arrangements with Catton to provide the latest Kurtis sports cars with the new disc brakes. The grueling demands of high-speed road racing should prove to be an ideal test for any innovation, especially the disc brake, for few fields of motoring require the high braking performance needed in road racing. The disc brake is ready to prove its worth, and it is known that the brake is readily adaptable to the American stock car. The production car needs such a brake, and we feel that if the disc brake meets with and survives the rigors of competition, it will be better able, in a short time, to meet with full acceptance by car manufacturers and the public.



Hub extension flange fits over teeth on gear-like lining ring, revolves with wheel



Complete assembly shows hub flange in place. Tubing equalizes cylinder pressure



Catton brake has few components. Parts in foreground are used on knock-off wheel



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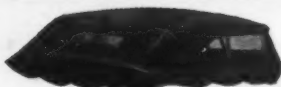


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Seventy-eight

## MT RESEARCH



## TECHNICAL SERVICE

By Fred Bodley

**QUESTION**—In your June issue you gave the speed of the '53 Olds as 109.2 mph (fastest one way run). In the September issue, the "World Car Survey" gave the top speed of the Olds as 96 mph. Please clear this up for me. Neil Robinson, Wauwatosa, Wisc.

**ANSWER**—Figures used in the "World Car Survey" were taken from a reliable source which had compiled its figures from factory releases. We used the information in its entirety, rather than interpolate our Road Test figures for the various cars we have tested. We considered this policy fairest to all concerned.

**QUESTION**—I have been referred to you regarding a carburetor for my 1952 Ford V-8, which will save me at least 20 per cent on gas. Edward E. Bosserdet, Fitchburg, Mass.

**ANSWER**—I am sorry to say that I do not know of a carburetor that will save you 20 per cent on fuel. If I did, I'd have one on my car. Many claims are made for carburetors and gas savers, but to keep good all-around performance it is hard to better a stock carburetor when it is properly set. There may, though, be such a new carburetor.

**QUESTION**—I would like some information on how to preserve the inferior chrome on my new car. It seems to have a coating which is coming off.

**ANSWER**—Due to government restrictions, material to produce lasting chrome plate has not been available. To offset this condition, manufacturers have applied a clear synthetic coating to protect the plating from the weather. It is this protective coating which you see coming off. Remove the rest of it carefully with paint thinner and coat the chrome with clear synthetic enamel or lacquer. Each new car has a leaflet of instructions on the care of the chrome. These instructions should be followed carefully, especially the cleaning routine. Do not use abrasives, and wash frequently with clear water, so there is no film of dust to hold moisture and start a rusting condition of the metal under the plating.

**QUESTION**—I have a '51 Ford with Fordomatic and live in a house trailer. I heard that Fordomatic was the thing for pulling, but find that I have to go into low range for grades, and some of them I barely get over. Can you help me? Leslie Farrill, Metropolis, Ill.

**ANSWER**—If you will put your Ford in low range and step on the brake, then press the accelerator, you will find that the engine will turn up fairly well with the car motionless.

Now when you are pulling your trailer on a hill, and the load of the trailer equals the brake pressure you were applying, the same thing will happen; your engine will keep turning up, but you will not be moving, due to the slippage of the Fordomatic drive.

To pull a trailer, I can only suggest you trade someone your Fordomatic for their standard shift transmission.

**QUESTION**—I have a '49 Chevrolet with standard transmission. Several weeks ago I installed new rings and "Hi-Lift" rocker arms. My acceleration has dropped way off and I have lost 10 mph top speed. Can you help me? W. J. Hageboom, Helmut, N.Y.

**ANSWER**—I would say that your loss of acceleration and top speed since installing the "Hi-Lift" rockers and doing the ring and valve job is due to the work done rather than the "Hi-Lift" rockers.

If you did not rebore when installing the new rings it will take a few thousand miles to seat the new rings in the old holes. Check the valve timing and valve clearance carefully. Be sure that the pushrods clear the holes in the cylinder head. Because of the shorter arms there is a tendency for the pushrods to bind, slowing up the valve action. Check compression with a gauge when the engine is hot.

**QUESTION**—How can I get better gas mileage from my 1952 Chevrolet with Powerglide? May I use a different oil in the transmission to reduce the slippage? Earle Chaddock, Sacramento, Calif.

**ANSWER**—I would not advise using any but the recommended oil in the Powerglide transmission. This type of drive is wasteful when accelerating from a standstill, and at low car speeds. The best way to obtain better gas mileage is to use a light foot on the accelerator or change to a conventional type transmission.

**QUESTION**—I own a 1951 Nash Ambassador with Hydra-Matic transmission. I have been trying to get some information from several sources, including Nash Motors, and have come up with the following:

Motor Trend

1. I have milled the head .060—no change noticed, and no one can tell me what my compression ratio is.

2. I have the dual carb manifold plate (the type used on the '51 Nash-Healey).

3. I have found that the Hydra-Matic throttle rod need not be altered, but can remain anchored in its present position, and connected to new linkage between the carburetors.

4. No one can tell me what carbs to use, or how to form the connecting linkage.

Paul De Geunaro, Jamaica, N.Y.

**ANSWER**—To increase the horsepower of an engine, it is necessary to carry through with whatever modifications you have started. Putting two carburetors on an engine will not necessarily increase its power if you don't install larger valves; larger valves will not help too much if you don't open up the ports and passages an equal amount. The engine will not turn up faster if you don't install heavier valve springs, as the valves will float at higher-than-stock rpms. Also, the engine will not turn up as it should with these changes if you don't use a reground, or higher-speed, camshaft.

If you do all these things, then you should install an ignition setup designed for high engine speeds. I have not mentioned increased compression ratio, as you said you have done this by milling the head. You should now have a compression ratio of about 8:1. With a higher ratio, you should also use colder spark plugs.

Each part of an internal combustion engine is designed in relation to all other parts of the engine to deliver a specified power output at a given engine speed under certain conditions. When you change one of the engine's design features, you should carry through, as I said before, to obtain an appreciable power increase.

As for throttle linkage, ball-bearing throttle rod ends may be bought from most speed shops or parts houses. The throttle rod may be threaded, to serve as an adjustable rod. A threaded block can be put into the throttle rod at a convenient place, and the Hydra-Matic control rod connected to this block.

With your present setup, I would use two stock carburetors. Some experimenting with jet sizes should result in a satisfactory fuel-to-air ratio. If you follow through and install larger valves, slightly larger carburetors may be used to advantage.

**QUESTION**—I am interested in learning the titles, authors, and publishers of a recommended text on the theory of automobile engines and design. I would prefer texts at the university level. W. Bobey, High River, Alta., Canada.

**ANSWER**—I suggest "Internal Combustion Engines" by Edward F. Obert (International Textbook Co., Scranton, Pa.), and "Mechanical Engineers' Handbook," by Lionel S. Marks (McGraw-Hill Book Co., Inc., New York, N.Y.)

To complement either or both of these texts I would also suggest "Machinery's Handbook," by Erik Oberg and F. D. Jones (Industrial Press, 148 Lafayette St., New York 13, N. Y.).

October 1953



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# Rambling Rags



WINGS, the "flight-weight" luggage, is marketed as an airline specialty, but is ideally suited for overnight trips, or for those motorists with little or no trunk space in their cars. Designed particularly for maximum strength with a minimum of weight, the duffle-type bags are constructed over cold-rolled steel frames. The larger bag has a soft top, with a hard lower portion built to carry hats or shoes; it weighs four and one-half pounds. The plaid bag weighs just three pounds, and features a zippered side pocket designed to carry passport folders. Both bags can be locked. These are in fabric, but the entire line (including two-suiters and wardrobes) is available in leather.



Eighty



SPORTING A NEW "casual-but-comfortable" jacket, MT Editor Walt Woron talks over road test data with Dick van Osten, MT's Technical Editor. Designed for "pleasure-driving," this neat-appearing motoring garb is made of rayon and nylon gabardine.

HERE'S AN ITEM for the old-time car fans—genuine vitreous enameled cuff links with matching tie pin, in an old-fashioned automobile motif, will bring back "the good old days" to both young and old. A Ford, a Buick and that old-time favorite, the Winton, are represented. Designs are in three colors; your choice of a white or black background.



FIRST IT WAS crest keys, now it's crest clothes—a smart new application of the automobile crest fad, now catching on in the East, but destined to spread across the country as more and more motorists become style-conscious. The crests (a Cadillac crest is being modeled here) are worn on flannel blazer jackets, in colors to suit your mood or the color of your car. The manufacturer has designed this built-in accessory to keep the wearer in tune with the times, as well as with motoring needs, for the blazer can be fitted with crests of most of your favorite cars.



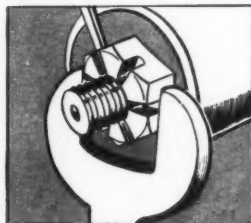
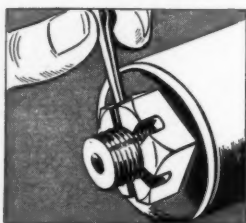
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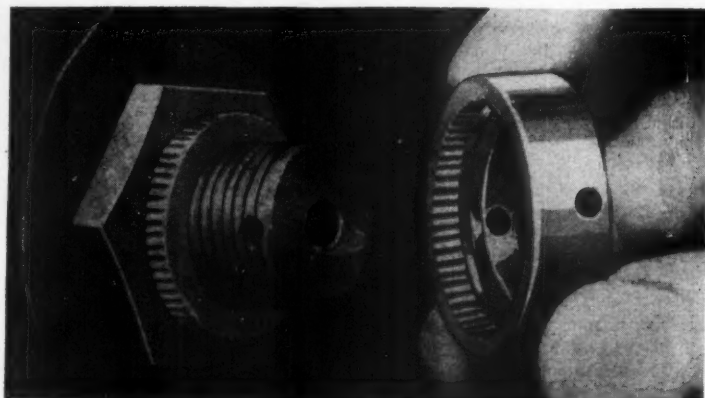
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**HERE'S HOW THE "EDUCATED NUT"** solves the problem with interlocking construction. First, the hexagonal part of the nut is tightened to exactly the right setting, and it is never moved from that position. Bearings are locked in precision adjustment (leading automotive magazine reports .001 accuracy!) with ingenious 60-point micrometric head. Saves tires, bearings, brakes—even eliminates 90% of brake squeaks. Actually easier to install than conventional nut.



Odds are 100 to 1 against accurate wheel bearing adjustment in your car—regardless of how much it cost, or how new it is. A fundamental weakness in the design of conventional front wheel bearing nuts makes it nearly impossible to adjust wheel bearings accurately, or readjust them accurately as wear occurs. This play in front wheel bearings causes re-alignment and adjustment problems. Your tires, brakes and bearings wear out faster than they should; steering is harder and less accurate—all because of excessive front wheel wobble.

*Detroit engineers, with millions of dollars in equipment at their disposal, have never found the answer to this "unsolvable" problem of automotive design.*

Then a precision machinist named Polizzi—whose only connection with the automotive industry was that he owned an automobile—discovered the answer. Like many baffling problems, the answer was astonishingly simple. Instead of attempting to improve on the conventional castellated nut, Polizzi abandoned it entirely and designed a nut with two parts that lock together in precision adjustment. Called the "greatest advance in wheel engineering in 42 years" his "Educated Nut" makes front wheel bearing adjustment 10 times more accurate—so precise that it even eliminates the need for balancing wheels, and for the first time makes perfect wheel alignment possible.

One big trucking company reported an \$18,000 saving the first year on wheel bearing replacement alone—plus tire, brake, and bearing replacement costs—always a major headache in the industry. Other fleet operators, as well as thousands of private car owners, have also reported big savings.

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*Here's the latest wrinkle in super-  
market tactics, as applied to the auto-  
mobile field; will car owners like the*

## CUSTOMER SELF-SERVICE SYSTEM?

By Sanford Markey



*Customer receives self-service check list;  
service manager can attend to other work*

**S**ELF-SERVICE has come to the service department of the neighborhood automobile agency—and it has meant lower prices for the customer, as well as substantial savings in time and expense to the dealer.

Designed by the Dobie Company of Cleveland, the system permits a customer to drive his car into the service department, check the car's service history, determine what work should be done on the car, make out a work-order sheet, then depart with serenity. Of course the service department manager is available for information and help, but he now plays a minor role.

Each customer has a service card record kept in a file adjacent to the service manager's desk. The customer can check the car's record against its needs, as indicated by the car mileage and condition. Maintenance operations are offered in accordance with factory service recommendations. A price list is located beside the service desk where the service records are kept. After noting the items needed, and checking the cost, the customer can leave a check list for his car, designating the work to be done. There are 24 items on the check list, ranging from chassis lubrication to universal joint repacking; there is also space for "additional services"—those items which are not listed on the check sheet.

Although the system does not eliminate the need for personal attention by the service manager, it has cut down consider-

ably the amount of paper work and attention usually deemed necessary.

Dealers who have installed the system estimate that it has saved at least two hours' supervisory time per day, and has eased the morning and evening rush hour demands.

A major feature of the system is that it puts upon the customer the burden for work to be done. There is a minimum of sales pressure; it puts service needs on an open, above-the-board basis, and gives the customer a case history of the work that has been done on his car.



*The car's past service record can be checked to determine its servicing needs*



*The customer writes listed prices on her order; service manager makes final check*

## Let's Make Accidents Safe

(Continued from page 21)

more power is really a safety factor. Probably there is a definite limit beyond which further increases in power would actually decrease safety. Whether our cars have already reached that limit (or passed it) will have to be answered by logical judgment. In any evaluation of the problem, let's remember that we are dealing with drivers whose skill may range from very poor to excellent.

We said we would *sidestep* the obvious, not ignore it. The "obvious" includes many things: wide cornerposts, high hoods, sharp projecting hood ornaments, unsafe dash panels. We slighted these hazards to life and limb in favor of others because they have been removed or are slowly being eliminated by the manufacturers. In some cases, the car owner can remove or alter minor objects in the interest of safety. Scientific research groups and drivers in competition have discovered many important principles. You can find many failings by your own observation.

We must share some of the responsibility of these faults with the car maker; if we won't accept an innovation in the interest of safety, the maker cannot be at fault. On the other hand, if we do recognize certain things that would provide an added margin of safety in our cars and these devices have not been provided, we can't be blamed. Recent developments indicate that the manufacturers are becoming more concerned with safety than they used to be, but many people feel that the manufacturers approach the problems too slowly.

One possible solution remains—one that would not only provide safety features sooner, but would discriminate between advertised safety and actual safety. A national bureau, similar to aviation's C.A.A., could consist of independent automotive safety design experts, technicians in every phase of engineering, and physicians specializing in the human element of automotive safety. This committee would pass judgment on samples of every new model and make of automobile before the car could be put on the market. Some will frown on the operation of such a bureaucracy, but such an organization might fulfill a public service.

It is paradoxical that we have spent so much money, time, and effort on the meticulous enforcement of so many traffic laws in the name of safety, while at the same time many of the most important safety requirements are either ignored or belittled. We can't slight the spirit behind some of our traffic laws, for we need laws to help reduce highway accidents. You may say that there will always be accidents; but will you say that we must always be seriously injured or killed when we do have an accident? Where human error is not at fault, and where highway conditions cannot be blamed for injury to car occupants, there is but one other element at fault—the automobile itself. Passing the buck? Perhaps, but let's be frank: your car could be better designed to protect you in an accident.

—Vince Dudley



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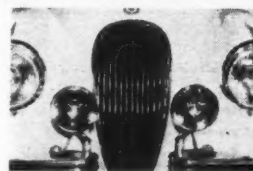
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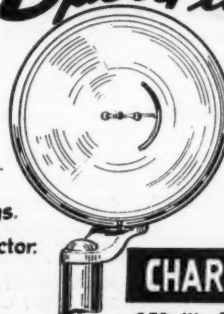
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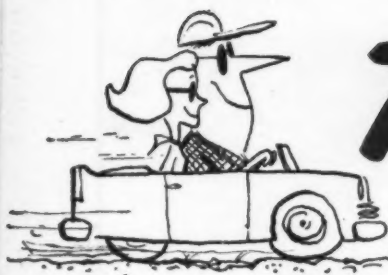
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# Tips for trips

## ARIZONA

Oct. 31-Nov. 1—Glendale, Lions Club Rodeo  
Nov. 6-13—Phoenix, State Fair

## ARKANSAS

Sept. 28-Oct. 3—Fort Smith, Arkansas-Oklahoma Livestock Exposition  
Oct. 5-10—Little Rock, Arkansas Livestock Show and Rodeo  
Oct. (1st week)—Blytheville, National Cotton Picking Contest  
Oct. (3rd week)—Eureka Springs, Ozark Folk Festival

## CALIFORNIA

Oct. 2-11—Fresno, 58th Fresno Fair  
Oct. 3—San Anselmo—34th Sunny Hills Grape Festival  
Oct. 5-10—San Diego, National Doll Show  
Oct. 7-11—Ventura, 40th Ventura County Fair  
Oct. 9-12—Inverness, Sir Francis Drake's Cruise to Tomales Bay  
Oct. 15-18—Hanford, Kings County Fair & King Cotton Parade  
Oct. 17-18, 24-25—San Diego, Metropolitan Open Tennis Championship  
Oct. 26-Nov. 1—Los Angeles, Fourth Annual International Motorama  
Oct. 30-Nov. 8—San Francisco-San Mateo, Grand Mar'l Livestock Exposition, Horse Show & Rodeo  
Nov. 4—San Francisco, Golden Gate Horse Show  
Nov. 8—Riverside (March AFB), SCCA Sports Car Races  
Nov. 8—San Diego Bay, Armistice Day Handicap Yacht Race  
Nov. 13-22—Los Angeles, Los Angeles International Horse Show  
Nov. 21-29—San Francisco, Motor Sports Show, Civic Auditorium  
Nov. 28-29—San Diego Bay, Thanksgiving Lightning Regatta  
Nov. 28-Dec. 3—Los Angeles, Great Western Livestock Show

## COLORADO

Oct. 8-14—Denver, Ice Follies  
Through Oct. 31—Trout Fishing Season  
Nov. 13—Statewide Ski Season Opens

## CONNECTICUT

Oct. 1-4—Stafford Springs, Stafford Fair (Horse and Auto Racing)  
Oct. 3-11—Danbury, Danbury Fair (Auto Races)  
Oct. 10-11—Thompson Raceway, SCCA Sports Car Races

## FLORIDA

Oct. 9-Nov. 28—Orange Park, Greyhound Races  
Oct. 19-24—Marianna, Jackson County Fair  
Oct. 19-23—Pensacola, Interstate Fair  
Oct. 26-30—Tallahassee, North Florida Fair

## GEORGIA

Oct. 25—Albany (Turner AFB), SCCA Sports Car Races

## ILLINOIS

Oct. 2-3—Blue Island, Railroad Days  
Oct. 10-13—Quincy, Industrial Exposition  
Oct. 15-17—Danville, Harvest Festival

## KANSAS

Oct. 2-3—Pratt, Fall Festival  
Oct. 21-23—Manhattan, Annual Turf Conference  
Late Oct.—Abilene, National Coursing Meet  
Nov. 24-25—Columbus, Turkey Derby

## KENTUCKY

Sept. 30-Oct. 10—Lexington, Harness Racing  
Oct. 26-Nov. 14—Lexington, Churchill Downs Fall Meeting

## LOUISIANA

Oct. 1-4—Winfield, Louisiana Forest Festival  
Oct. 6-8—Opelousas, Louisiana Yambilee  
Oct. 16-17—Abbeville, Louisiana Dairy Festival  
Oct. 21-22—Crowley, International Rice Festival  
Oct. 24-Nov. 1—Shreveport, State Fair of Louisiana

Eighty-four

**W**HETHER YOU'RE going away on a month's vacation, or just up-state to your Alma Mater for that big weekend homecoming rally and football game, don't spend your time looking for your money, when you could be spending your money to have a good time.

One of the most important steps in trip planning is to determine how much money you'll need while you're away. If you can make a fairly accurate estimate of how much money you'll spend, you can hold your spending down, and your enjoyment up.

On the other hand, don't let your trip suffer from "budget-itis." That is, don't be *too* budget-conscious; travel is a sound investment in relaxation, adventure, and fun, so avoid either skimping or over-spending.

When traveling, carry a bare minimum of cash, and no personal checks (the former is easy to lose, and the latter are hard to cash away from home). Instead, carry travelers' checks. They can be cashed anywhere, and if lost, are easily redeemed. Another way to avoid financial fumbling is to arm yourself with credit cards before you leave home. You can charge all car expenses at gasoline stations along the way, and in many cases, credit cards are available for lodging and food at hotels and motels.

Here's a motoring sidelight that may interest you: Did you know that during World War II, we "lost" four mil-

lion automobiles? These were home-front casualties, lost to age and wear. On February 10, 1942, we stopped automobile production to devote ourselves to tools of war. A government survey found that we were highly dependent upon our cars to get us to and from the defense plants—in one plant, 93 per cent of the workers *had* to drive to work. The lesson, then was plain; if we were to win the war, we had to keep our cars rolling. Experts concluded that of our 29 million cars, we could not let wear and tear claim more than nine million. We did pretty well; car registrations fell from 29½ million in December 1941, to 25½ million in December 1944. We had lost only four million cars, thanks in a large part to our automobile mechanics. Next time you think you have a gripe against a mechanic, think of this, before you blow your top.

Now from car sustenance to human sustenance. Don't let nippy autumn days put a damper on your picnicking spirit; eating out-of-doors is a real picnic anytime, so try a "canned" picnic. Stop at your grocer's, stock up your car with canned goods, add your favorite frying pan and can-opener to the load, and head for the picnic site. Cook meats and things over an open fire, and you'll hate to go back to kitchen cooking. Plan your picnic out-of-a-can, and you'll have an easy-to-make, easy-to-take meal out-of-doors.

Oct. 28-31—Jennings, Jeff Davis Parish Fair and Oil Exposition  
Nov. 5-8—Baton Rouge, Dixie Horse Show Jubilee and Louisiana Livestock Show

## MAINE

Sept. 28-Oct. 3—W. Cumberland, Cumberland Fair  
Oct. 2-3—Rangeley Lakes, Foliage Festival  
Oct. 5—Portland, Portland Country Club Pro/Amateur Golf Tournament  
Oct. 5-10—Fryeburg, Fryeburg State Fair  
Oct. 21—Old Town, Annual Hunters' Breakfast

## MARYLAND

Sept. 30-Oct. 3—Annapolis, Anne Arundel County Fair  
Oct. 6-10—Frederick, Frederick Fair  
Nov. 14-19—Timonium, Eastern National Livestock Show

## MASSACHUSETTS

Sept. 15-Oct. 15—Martha's Vineyard, Striped Bass Derby

Sept. 29-Oct. 15—Mohawk Trail, Autumn Foliage Tours

## MICHIGAN

Oct. 3-11—Lewiston, Archery Meet  
Nov. (1st week)—Ionia, Apple Festival

## MINNESOTA

Oct. 6-9—St. Paul, Junior Livestock Show  
Oct. 9-10—New Ulm, Ayrshire State Show and Sale

## MONTANA

Oct. 1-8—Great Falls, North Montana Hereford Breeder Bull Show and Sale  
Oct. 23-24—Butte, Rocky Mountain Feeder Show and Sale  
Nov. 7—Lewistown Central Montana Hereford Assn. Bull Show and Sale

## NEVADA

Oct. 17-18—Reno (Stead AFB), SCCA Sports Car Races

Motor Trend

#### NEW HAMPSHIRE

Oct. 1-4-Deerfield, Agricultural Fair  
Sept. 21-Oct. 24-Salem, Racing, Fall Meet

#### NEW JERSEY

Oct. 4-Stanhope, Classified Championship, N. J. Archery Assn.  
Oct. 9-11-Wildwood, Annual William Bright Memorial Golf Tournament  
Oct. 8-Nov. 11-Camden, Racing at Garden State Park

#### NEW MEXICO

Sept. 27-Oct. 3-Socorro, San Miguel Fiesta  
Oct. 1-3-Las Cruces, Lions Club Cotton Carnival  
Oct. 3-4-Taos, Spanish Fiesta at Ranchos de Taos  
Oct. 4-Nambe Pueblo, Annual Fiesta  
Oct. 4-6-Shiprock, Navajo Indian Fair and Squaw Dances  
Oct. 6-10-Roswell, Eastern N. M. State Fair and Rodeo  
Oct. 8-11-Deming, Tri-State Fair and Rodeo  
Oct. 18-24-Clovis, Southwestern Cattle Festival  
Nov. 1-Taos Pueblo Ceremonial Dances  
Nov. 12-Tesuque Pueblo, Annual Fiesta and Harvest Corn Dance  
Nov. 12-Jemez Pueblo, Annual Fiesta and Harvest Corn Dance

#### NEW YORK

Nov. 26-29-"Great American Mountain Rallye," Motorsports Club of America

#### NORTH CAROLINA

Oct. 13-18-Winston-Salem Fair  
Oct. 19-24-Raleigh, State Fair  
Oct. 24-25-Raleigh, Southern Seniors Golf Assn. Tournament  
Oct. 26-31-Pinehurst, North and South Invitation Seniors Golf Championship  
Nov. 7-8-Wilmington, Southern Seniors Golf Assn. Tournament  
Nov. 15-Southern Pines, Carolinas Golf Association Tournament

#### OHIO

Oct. 4-5-Yellow Springs, 100th Birthday Celebration of Antioch College  
Oct. 15-17-Gallipolis, First Annual Tobacco Festival  
Oct. 21-24-Circleville Pumpkin Show

#### OKLAHOMA

Sept. 26-Oct. 3-Oklahoma City, Oklahoma State Fair  
Oct. 3-9-Tulsa, Tulsa State Fair and Livestock Exposition  
Oct. 26-Nov. 1-Tulsa, "Ice Cycles of 1953"

#### OREGON

Oct. 3-Nov. 1-Waldport-Yachats, Salmon Derby  
Oct. 20-24-Portland, Pacific International Livestock Exposition

#### PENNSYLVANIA

Oct. 3-4-Upper Darby, Optimist Club Horse Show  
Oct. 11-Lancaster, Lancaster Fall Horse Show  
Oct. 11-Reading, AAA Big Car Races  
Oct. 18-Sewickley, Fifth Sewickley Hillclimb (SCCA)  
Oct. 18-Glen Mills, Fox Valley Farm Hunter Show  
Oct. 18-Mechanicsburg, AAA Big Car Sprint Races  
Oct. 24-31-Harrisburg, National Horse Show  
Nov. 19-Gettysburg, Dedication Day, Marking 90th Anniversary of Lincoln's Address  
Nov. 26-Berwick, Marathon Race

#### RHODE ISLAND

Oct. 3-4-Newport, Annual Rendezvous and Time Meet, Narragansett Sports Car Club  
Oct. 10-12-Newport, Dedication of Christopher Columbus Statue  
Through Nov. 1-Narragansett, Fifth Annual Narragansett Fishing Derby  
Through Nov. 11-Lonsdale, Stock Car Racing Twice Weekly

#### TENNESSEE

Sept. 23-Oct. 3-Memphis, Mid-South Fair

#### TEXAS

Oct. 2-4-Tyler, Texas Rose Festival  
Oct. 6-10-Crockett, Houston County Fair  
Oct. 19-24-Austin, State Hereford Show  
Oct. 28-31-El Paso, International Mining Days  
Oct. 30-31-Kilgore, East Texas "Jube-Oil-Lee"

#### WASHINGTON

Oct. 25-Tacoma, Tacoma Yacht Club Power Boat Race  
Nov. 8-Tacoma, Tacoma Yacht Club Memorial Sailboat Race  
Nov. 22-Tacoma, Tacoma Yacht Club Sailboat and Turkey Power Boat Races

#### WEST VIRGINIA

Oct. 3-4-Spencer, Blue Grass Riding Club Horse Show  
Oct. 3-Charleston, All-West Virginia Boat Racing  
Oct. 4-10-White Sulphur Springs, Greenbrier Autumn Golf Tournament

#### WISCONSIN

Nov. 14-Milwaukee, SCCA "Impossible Rally"

October 1953

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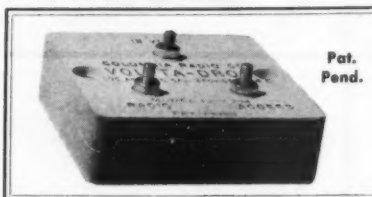
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Eighty-five

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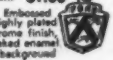
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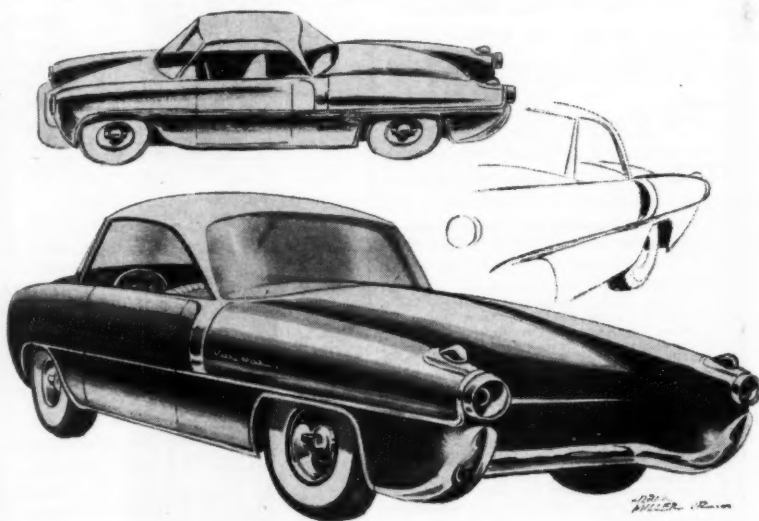


# Reading About Cars

IF A BOOK CAN BRING ALIVE to the reader an unfamiliar situation, it can be considered something of a success. Doubtless because he has been a racing driver himself (he won 27 firsts on the tracks of Europe) Hans Ruesch succeeds in hurtling the reader through the night with Erich Lester in the last miles of the Mille Miglia and in making him know when he has at last mastered the Nürburgring. Early in his racing career, Lester determines to climb to the top. Every move in his professional and personal life is for this alone; events and other people revolve about him only. The secondary characters certainly are never living people to Lester, but the reader would fare better if they were more clearly drawn. If he is an enthusiast, however, he will meet some old friends under new names. *The Racer* is not amusing to read; you will feel tired and bitter with Lester, and you will know the horror of shooting from a course at high speed; but when you finish the book,

you will know something of what it is like to race. *The Racer*, by Hans Ruesch, 35c. At your newsstand, or from Ballantine Books, Inc., 404 Fifth Avenue, New York 18, N.Y.

**THIS UNUSUAL EXAMPLE** of the workings of free enterprise seems to be its author's agonized plea for release from the mad world of advertising claims in which we live. Mr. Ketcham, to his credit, seems fearless enough, and quite willing to state which motor oil he likes best, what he thinks of certain manufacturers' advertising (and products!), and how best to maintain your car. In addition, this entertaining, if ungrammatical, mimeographed book gives the recipes to detect counterfeit coins, remove ear wax, and duplicate several familiar brands of cleansers, polishes, and lubricants. *Ketcham's Automotive Handbook and Buyers' Guide*, \$2.00 from Charles Judson Ketcham, P.O. Box 55, Barberton, Ohio.



## A Pusher for the U.S.A.

AS LONG AS I'VE BEEN INTERESTED IN CARS (and that's been about 25 years) I've heard of rear-engined cars being 'just around the corner.' I've awaited them with great anticipation. So here we are in the atomic age. Rockets and flying saucers are everyday stuff, and still no rear-engined American cars. I'm tired of waiting!" So writes artist Frank Miller Jr. of the Des Moines (Iowa) *Register and Tribune*. To make the long wait easier, he has drawn up his concept of a stern-wheeler that he thinks his fellow citizens would accept in droves.

The car has a V-8 engine; the front is for luggage, legs and feet. The luggage compartment is accessible from the inside as well as through the trunk lid, since the dash is a small one in front of the driver only. That's a radiator air intake just behind the door, and the airscoop bulges continue back to form dual exhaust ports. Taillights are airplane wing type; the driver can see them in his rear-view mirror.

"Would it work?" asks Mr. Miller. "I don't know. That's for the engineers. I'm just an artist and a dreamer, but I have fun."



**OBVIOUSLY WRITTEN** for British readers, *British Motor Cars*, edited by John F. Speed, nevertheless has much information in which Americans will be interested. Along with a complete rundown of all cars (37 of them) presently produced in Britain, there are brief articles by well known names in the British motor industry. These articles include such things as selection of the type of car you may want; a resumé of British cars that have made motoring history; production car successes; and a background of the SMMT, Britain's equivalent of our own AMA (Automobile Manufacturers' Association).

A major portion of the 172-page book, on the finest slick paper, is devoted to an alphabetical rundown of each car. These 144 pages are crammed with historic information, photos, and descriptions of each style produced under each marque with complete details, specifications on engine, transmission, suspension, brakes, dimensions, performance, and price (in Britain).

A valuable reference piece, this book is highly recommended for those readers who need factual information and like to study specifications. Published by G. T. Foulis, Ltd., London, England, and available from them or in this country from Box 409-T, North Hollywood, Calif. Price \$3.50.

**IF YOU'RE INTERESTED** in European racing, the *Motor Sport Racing Car Review, 1953* is "must" reading for you, for author D. S. Jenkinson gives you a full review of the 1952 season, an insight into the 1953-54 seasons, and background material on all the cars. Along with full-page size (5 x 7) photos of cars, there are also some photos of the more interesting details, such as engines, suspension, cockpit. Not profusely illustrated (27 photos), the book packs most of its punch in the well written, detailed copy, spread throughout 132 pages. Published by Grenville Pub. Co., Ltd., 15-17 City Road, London, E.C. 1. Available from Autobooks, Box 409-T, North Hollywood, Calif. The price is \$2.00.

**ONE OF THE FEW** entertaining fiction stories about racing, *Thunder Road*, by William Campbell Gault, has an interesting plot, but one which, particularly to persons familiar with racing, is weak in spots. Gault uses proper terminology and appears to know his subject quite well, albeit he slightly overemphasizes the rivalry between hot rodder and big-car driver. He does it with a reason—that's the basis of his story.

It could have been a much-better-than-average book, had not Gault allowed himself to step out of his role as storyteller to pass on a bit of advice to hot rodgers, then gone on to wind up the book with a movie-type ending. He creates the implausible situation of a practically novice driver (with only a few sprint events under his belt) entering the Indianapolis 500 for the first time, qualifying at phenomenal speed and moving into the lead almost immediately, to finish in a blaze of glory! If many readers stay with him to see what Hero Pete Elliot does then, it will be from curiosity, not interest. The fiction piece is published by E. P. Dutton & Co., Inc. Price \$2.50.

October 1953

  
1904 Cadillac

  
1904 Crestmobile

  
1905 Springer

  
1910 Matheson

  
1914 Detroit

  
1903 Peerless

  
1905 Elmore

  
1907 Standard

  
1907 Marmon

  
1907 Thomas

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## IV CARRERA PAN-

**H**OLD ON TO YOUR crashproof sombreros, señors! The racing tycoons down Mexico way have gone into a huddle and come up with some rules with real purpose for the Fourth Mexican Pan-American Race. The dates are the same—November 19—23. The route is the same—from Tuxtla Gutiérrez, Chiapas (about an hour, by Ferrari, north of the Guatemalan border) through 1912 tortuous miles of mountain and desert, north to Ciudad Juárez (across the Rio Grande from El Paso, Texas). But from here on, drastic changes begin.

Remember the assembly line crew under the masterful guidance of Clay Smith and Bill Stroppe that swarmed over the Lincolns after each day's racing last year? Working with check sheets, they went over every inch; wheels were stripped off, brake drums and surroundings blasted clean with high-powered air, valve covers came off, etc. A real overhaul, and if it took all night until time to be on the starting line, okay. They wanted to win, and they did—in one, two, three order.

Well, they won't this year—work all night, that is. Under the new rules, all cars in competition will be locked under seal in an impound area not later than three hours after crossing a lap finish line. Any needed repairs or tuning, as well as taking on gas and oil, must be completed, and the car available for sealing, within the three hours, under pain of disqualification. If you should turn up with a flat tire during the night, you can fix that before takeoff time, but that, brother, is *all*. If you don't like the way the heap sounds, you'll have to take the flag, start on the next lap, then pull off the side of the road while the precious minutes run away—and don't let anyone see a stray Indian picking up a cotter pin for you. Anything done by anybody but the driver or co-driver will earn you a disqualification.

The struggle to achieve the mechanical never-never land of "strictly stock" takes on new and considerably more substantial dimensions this year. Gun-shy from the barrage of gripes that have followed each race (the screams last year, for instance, that Lincoln used "racing kits") and from all the talk about high speed rear ends and tricky cams, the committee has given up looking for virtue in such noble phrases as "standard factory options." At the cost of a lot of labor, data have been collected from each manufacturer on which to base chapter and verse citations in the rule book. If the book doesn't list it, then you just can't use it. And that, sir, is the end.

If this seems to you to strain the point somewhat, it's only fair to recall a bit of the past history of the Pan-Am. The first race, organized hastily in the spring of 1951 as a one-shot event to dedicate the western branch of the Inter-American highway, was limited to one category, "strictly stock." Lack of experience made for scanty supervision, but the slow average speeds compared with subsequent races indicate a relative absence of hanky-panky.

The second race, in the fall of the same year, was supposed to be more of the same, but there were loop-holes in the rules and the boys had had a few months to sharpen their wits. The trouble began over the modifying of cams. Somebody claimed to have misunderstood the intent of the committee and proceeded to install racing cams. Rather than telling this guy "tough luck," the powers did what seemed to them the fair thing, and modified the rule for everybody else. Without meaning to, they then had a "modified" stock race on their hands.

Tony Bettenhausen, in a Chrysler solemnly described by its sponsor as "strictly stock," reached top speeds of 130 mph (clocked from a plane between Chihuahua and Juárez) and broke Bill Sterling's Cadillac-recorded race record of about 100 mph.

Even more startling (and still perhaps the most discussed single feature of the entire history of the Pan-American Race), was the shabby 1947 Mercury, bought at a used-car lot, which turned in a 2000-mile, five-day average of 87 mph over some of the toughest main-highway driving in the hemisphere. This was only about a mile an hour slower than winner Taruffi's time in a 2.5 Ferrari.

Even with Troy Ruttman at the wheel, and Clay Smith beside him doing everything but talking to each piston by name, such "stock" performance was a little startling. The post-race air was filled with cries of anguish. Not a single car in the race was stock, it seemed, except the one belonging to the weeper who happened to be wetting your ear. The only point agreed to by all the operators of American machinery was that the first and second place Ferraris were entirely sports cars and should have picked on somebody their own size. Taruffi and Ascari just smiled their soft Italian smiles and pointed out (with impeccable accuracy as far as it went) that they hadn't done a blessed thing to their cars but put in gas. They were no differ-

**The date's the same, so is the route; but any resemblance to**



# AMERICANA MEXICO

ent than could be purchased from the Ferrari factory by your Aunt Minnie for a mere \$15,000—strictly stock.

Blown hither and yon, the poor race officials resolved resolutions for 1952. First, all non-Detroit products would be considered "sports" cars and given a category of their own. The officials warned all sides that if they did not adhere to this ruling, American drivers would boycott the race. The theory that "American" is synonymous with "stock" and "European" with "sports" is highly debatable, but except for the Mark VII Jaguar the committee has been able to make it stick, by establishing a 5000-unit annual production minimum, not of the make, but of the model.

The second resolution involved our old friend "strictly stock." Except for modifications related to safety (brakes, suspension, etc.) the stock class entries were to be just as dispensed from the showrooms. Factory options? Well—uh—as long as they didn't represent changes in the engine.

Whoa there! How about Hudson Twin-H Power? That involved adding a carburetor, but the factory was installing more than 5000 Twin-H rigs a year. Didn't that make it stock? No, said the committee, it did not. No dual carburetors under any name, yet they didn't care how many barrels a Cadillac carburetor sheltered beneath one roof.

Their stand was unshakeable—for a few days. Then it was abruptly reversed; Hudsons and Nashes were permitted dual carburetors under certain circumstances. If one of them had won, the poor committee would have been out in the puddle again, not that they escaped, of course. Three "strictly stock" Lincolns romped in with the highest speeds yet, and instead of the postmortems revolving around carburetors, the groans were about "racing kits." Nobody could really prove that the Lincolns played dirty, but just look at the speeds! "Listen, bub, you trying to tell me any stock car made can average 115 miles per hour for 2000 miles? Just try and buy a Lincoln like those Estes jobs!"

GM was not a bit happy, and the loudest moans of all came from another Lincoln sponsor who objected because Clay Smith had thought up something his boys apparently hadn't. Anyhow, the moral, if any, is that rules committees never win. But the Mexican Race officials keep trying, and this time they hope that by putting every blessed detail in writing, and forbidding

anything that isn't written, they won't have to go into hiding on November 24.

Leaving behind the gripes, groans, and problems of the past, and getting down to the business at hand, we find that a great deal of serious thought and determination has gone into the preparation of the forthcoming race. Reading between the lines of the rule book, we sensed a suggestion that there would be no foolishness from any corner, before, during, or after the Fourth Mexican Pan-American Race. Although the race officials have not made any statement of their attitude, they have nevertheless made their position quite clear. This is seen in the penalty phrases throughout the articles of the rule book; it is also seen in the extensive coverage of the matter of complaints—both during and after the race. Contestants must agree to the channels set up by the committee through which complaints must be filed; a meticulous chapter on public statements or complaints coming from the drivers or crews makes the official stand quite clear to all concerned. Any breaches of discipline will bring a time penalty, or complete disqualification, if repeated.

The race committee is clearly entitled to make any rules it sees fit to utilize; and this year, the officials have gone about as far as it is humanly possible to make the much-bruised expression "strictly stock" mean what it says (as well as putting a stop to the persistent talk that cars in the sports class have exceeded even *their* almost-anything-goes status by such antics as changing engines). It is of prime importance and interest to everyone that there be a clear understanding of exactly what is stated or implied by the official language (Spanish) of the rules. There is also the possibility that, in the process of translation from Spanish into English, unintended shades of meaning may creep up to confuse some of the issues.

With the notion of bringing about a meeting of minds, and perhaps preventing later misunderstandings, MOTOR TREND was invited to submit a list of questions to Race Director-General Enrique Martin Moreno. The following questions and Mr. Moreno's answers, in certain instances, were commented upon by MOTOR TREND's correspondent to clarify any misleading or obscure statements. Further questions, answers, opinions, and clarifications will appear in November MOTOR TREND.

(Continued on next page)

## former Mexican Road Races ends right there

By Don Pope

October 1953

Eighty-nine



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**Q.** It seems clear from the rules that no mechanical work whatever, except changing flat tires, will be permitted in the impound area. Is this correct?

**A.** Any work can be done to the car within the three hours before a car enters the impound area. Any part of the car changed within this three-hour time limit must be of the exact same type which was removed.

**Q.** If repairs must be done in garages, is allowance made for drastic differences in distances between the garages and the impound area—particularly in Mexico City?

**A.** The time will remain the same in all cities—that is, three hours.

**Q.** Will cars going to the impound area have an official escort responsible for getting through traffic in the allotted time? Will the escort be authorized to modify the time rule in case of delays not the fault of the contestant?

**A.** In Mexico City, the cars will be accompanied by special motorcycle police details, assuring the contestants of arrival at a quick rate of speed.

(The Race Committee recognizes the possibility of the contestants being delayed enroute to an impound area through no fault of their own, but feels that this is an unavoidable risk that all entrants will have to face. The race director says the same system is used widely in Europe without serious trouble. The impound area will be under the control of the military.)

**Q.** Can a car be pushed across a starting line by its crew?

**A.** The car is not considered as being in the race until it leaves the starting line, but it can be pushed off at the start only by the crew.

**Q.** In the rule book time chart, 15 minutes additional time is allowed the "sports under 1600 cc" class; why is this?

**A.** The best time registered for cars in the "Sports" category in the Third Pan-American Race was two hours, 27 minutes. Small cars in this category must be protected within this time limit.

**Q.** Will customs clearance be available to contestants who want to import special fuels into Mexico? Which, if any, special fuels can be purchased in Mexico City? Assuming that "any fuels" includes diesel oil, is it available at principal "Pemex" stations along the route?

**A.** The Customs Offices have been requested to facilitate passing all equipment and special fuels for crews coming into Mexico. It is assumed that Mexico City has alcohol and diesel oil; but the Race Committee does not guarantee any supply of any fuel, other than 80-octane aviation-type gasoline and "Super-Mexolina" at gas stations.

(Sports classes only will use 80-octane fuel, but are "authorized to use any fuel or fuel mixtures they deem necessary." Cars in "Standard" categories will use only "Super-Mexolina," a fuel available along the whole course. Alcohol is believed to be plentiful in Mexico City, and diesel oil is known to be available as far south as Oaxaca.)

**Q.** One of the rules specifies that the cars remain sealed up to the starting line. What constitutes the starting line—the lineup at the start, or the point at which running

time begins to be counted against the car?

**A.** The starting line begins when the time is clocked off.

**Q.** What is included in sealing of engines? Won't sealing cars in order of entry, beginning with the lowest numbers in each category, seriously penalize contestants who got their entries in early?

**A.** The engine will be sealed by a lead seal—the parts sealed will be at the discretion of the Technical Committee.

(After the car is sealed, no further work can be done unless special permission from the Technical Committee is obtained. This permission will be granted only when the committee feels that the work is required. As to the question of fairness (early entries having their cars sealed long before other entries), the answer was "we do not understand this question.")

**Q.** Article 36 states that "during the 30-minute stop at each of the . . . intermediate legs, the crews can make any necessary repairs to their vehicles and accept aid from a third party." What is meant by a "third party"? Does this limit the number of helpers to one?

**A.** Within the 30-minute period in the short legs, the crew can take on as much help as they require.

(The singular use of "party" was a matter of translation; entire technical crews may be stashed at these stops (Puebla, Leon and Parral), though they will, of course, be unavailable for those precious three hours of work that can be squeezed in at the end of each day's run, unless the sponsor provides air transportation for the technical crews to travel between points of impound.)

Those were the questions put to the race director. The remaining questions in our minds concerned specific categories, and the limits imposed upon stock cars. This is what we learned from the rule book (an English translation of the official Spanish language edition):

The cars admitted to competition will be divided into four categories: "International Sport," "International Standard" (1950-53 models), "Sport, up to 1600 cc" (97.6 cu. in.), and "Special Standard" (models 1950-53). The "International Standard" category will include 100 entrants; the others, 50 each. The following is a breakdown of each class, giving its description and limitations:

**INTERNATIONAL SPORTS**—"Sports"-type automobiles of any engine displacement or horsepower, open or closed bodies (with a minimum of two seats), as well as "Touring"-type automobiles, freely modified. Frames, engine, or body need not belong to that make and series of vehicle as listed in the manufacturer's catalog. Superchargers will be allowed. Electrical equipment and fenders must be in perfect condition, and at no time will engines be exchanged or fenders removed, under penalty of disqualification.

**INTERNATIONAL STANDARD**—Closed body with five-seat capacity, and measuring no less than 84 inches long and 54 inches wide (inside body dimensions). At least 5000 units must be manufactured annually (units of the type entered in the race). Only

factory-listed optional equipment can be utilized. (Twin-H Power is acceptable, because it is installed in production, but the "7-X" engine is not allowable.)

**SPORTS UP TO 1600 CC:** Those cars, factory-built, and advertised and sold as "sports cars," of up to 1600 cc displacement without supercharger. Superchargers will be allowed on cars up to 800 cc (49 cu. in.) displacement. Open or closed body styles with a minimum of two seats are recognized. Electrical systems, fenders, and engine changes same as in "International Sports" class.

**SPECIAL STANDARD:** Reserved for the following cars: Henry J, four and six cylinders, Studebaker "six," Nash Rambler, all-steel (closed bodies), Nash Statesman, Willys "Aero" series, Dodge "Diplomat" (Canadian; 114-inch wheelbase, Dodge "six" engine), Dodge "Kingsway" (Canadian; 114-inch wheelbase, Plymouth engine), Plymouth, Ford "six," Ford "eight," Dodge "Coronet D-46" (Canadian; 119-inch wheelbase, six cylinder engine), Hudson Jet, Chevrolet, Hudson Wasp (112 horsepower) and Pontiac "six." Of the cars listed here, none will be permitted to enter in this category if it exceeds 115 horsepower. The Pontiac "six," for instance, cannot use the optional 7:7:1 cylinder head and remain in this class, for its horsepower would be raised to 118.) These entrants will adhere to the same rules established for the "International Standard Category," in respect to optional equipment.

After selection of tires and optional equipment has been made, the vehicle must carry the same specifications throughout all the legs of the race. The one exception to this rule is the use of factory-furnished carburetor jets or metering rods; these may be changed in different legs of the race, but they must conform to series and catalog specifications. No modification may be made to the original design or to specified, catalogued parts: for instance, polishing intake and exhaust ports is forbidden, as are porting and relieving. Valve angle or valve spring pressure cannot be altered, and where design calls for hydraulic valve lifters, there can be no change to mechanical lifters. The use of optional camshafts is strictly taboo. The one major allowance afforded all cars in both "standard" classes is the privilege of over-boring cylinders up to .020 inch in excess of their original dimensions.

The rules governing every car eligible under the two "standard" categories specify permissible compression ratios, allowable optional transmissions, rear axle ratios (as listed by the manufacturer), electrical equipment, permissible tire sizes, and cooling systems (such as the Lincoln-Mercury "Standard" or "Tropical" systems).

For safety reasons, the following modifications are permissible on all automobiles: Modify suspension and shock absorbers, modify the brakes, remove the muffler without alteration to the exhaust manifold (the tail-pipe must end under the rear bumper), use special tires and rims but always of the original size, reinforce the inside of the body for greater protection, remove the rear seats to install an additional fuel tank (with one or more vent pipes leading to the outside

of the body, at the rear) or to make room for spare parts, install an electric fuel pump, reinforce or improve the hood catch, and install any type of stabilizer.

At presstime, this was the very latest news from race headquarters in Mexico City.

Rules have been mailed to all previous contestants, and while only a few entries have been received, no complaints about the rules have been registered. In the stock class, Bob Estes' three Lincolns are the early birds, followed by a few local entrants. Kiekhaefer has reserved numbers for three Chryslers, but has not yet paid his entry fees. Bob Korf will be piloting one of these Chryslers (Korf, now in civvies, drove for Kiekhaefer last year, as an Air Force pilot on leave). A probable teammate will be Reggie McFee; a third driver is still unnamed.

The first and so far the only paid-up entrant in the light sports class is Jacqueline Evans. Miss Evans, who will drive a Porsche coupe, is the only woman who has been in all three Mexican races; she's finished twice, crashed once.

Jean Treboux, twice in the money in three races, will pilot a special Packard in the large sports class. The body, being made in Italy, is to be mounted on a standard Packard "200" chassis.

There's still no definite word from the European teams. Ferrari, Alfa, Lancia, and Gordini are considered certain to enter. Karl Kling, last year's winner in a Mercedes, is expected to drive an Alfa. Bonetto and Maglioli will probably mount Lancias, and Jean Behra, who nose-dived a Gordini off a cliff in the '52 race, will try another Gordini. Factory and privately owned Porsches are expected to flood the "Under 1600 cc" class. There seems to be a strong possibility of a company team being entered by Aston-Martin. Jaguar is still a question mark (William Lyons is still talking) and Cunningham is equally tight-lipped about entries.

The all-American monopoly in the stock class will be broken by Guy Vincent's promised entry of a Mark VII Jaguar. (Vincent, a Jag dealer from New York City, entered a Mark VII last year). As no European cars are covered by the detailed optional equipment list (or by name listing as in the light stock class), the committee has ruled that non-specified makes, to be eligible, must be "stock" as defined in Article 11 of the rule book (rule 11, outlined here earlier, describes the "International Standard" category).

The cold, precise rules have been outlined, and the latest information about drivers and cars has been reported; but don't think that "there's nothing left but the running," for there's a great deal more to be said about the race. Speculation and rumor will persist until race time and new facts may be brought to light. Yes, there's more to just rules and racing: how and why was the race organized? What part does the Mexican Government play in the Pan-American Race? What is the official attitude toward the annual event? How does the race affect the Mexican people? The full behind-the-scenes story will appear in the November issue of MOTOR TREND.

—Don Pope

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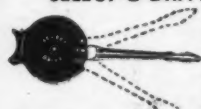
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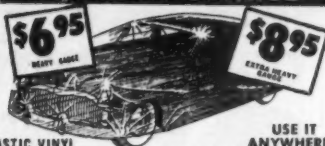
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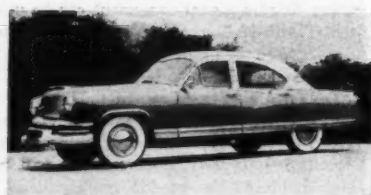
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# The Start of the BIG 4?

A new rumor centers around  
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**K**AISER-FRAZER, the only active recent invader of the passenger car industry, finished its 1952 model run in the black but the future looked even blacker. After a high of 139,452 sales of 1951 Kaisers, the firm managed to make only 32,131 of its 1952 jobs. Edgar F. Kaiser realized that something would have to be done if Kaiser was to stay in the automobile business.

The problem seemed to be that although most experts agreed the Kaiser was a fine car, purchasers regarded the Kaiser firm as a war baby and were leery about doing business with such a young organization. Already talk had started that within "a couple of years the Kaiser will be an orphan." The Kaiser needed prestige and solidarity, attributes which Willys - Overland, passing its 50th anniversary, had in abundance.

It was then that Edgar F. Kaiser approached Ward M. Canaday, president and chairman of Willys-Overland, to begin discussions that lasted more than a year in the preliminary stages with final negotiations taking more than three months. These talks culminated in the cash purchase of Willys Motors Inc., now a wholly owned subsidiary of Kaiser Motors, for \$62.3 million.

The deal was attractive to Willys as well as Kaiser. Willys has no body-building plant and must purchase its bodies while Kaiser has an up-to-date stamping and body shop at Willow Run. Kaiser brought a wad of working capital to Willys and assumed certain liabilities of

the firm. Willys, on the other hand, has an excellent forging plant whereas Kaiser had none. The consolidation of the two firms promises to strengthen the production facilities of both.

Engineering, purchasing, and other functions of the two companies are now in the process of consolidation at Willys' former offices in Toledo. The dealerships of both Kaiser and Willys will be joined together in a setup similar to Lincoln-Mercury or DeSoto-Plymouth dealerships. Before long you will begin to see blue and yellow "Kaiser-Willys" signs around the country.

Styling integration will begin to show up to a moderate degree in 1955 cars and for 1954 two Kaisers, two Willys Aero models and the six-cylinder Henry J reportedly will be offered. Also reported in the works for 1955 is an ohv V-8 that "will show the industry what horsepower really means" when installed in the Kaiser.

The future of Kaiser-Willys looks

good. Behind the venture stand the Kaiser industries with over \$800 million assets in such industries as aluminum, steel, and concrete.

Kaiser is not shutting its eyes to the possibility of the purchase of a well-known auto company in the luxury car field, either. Its current line of products brackets the price area in which 94 per cent of all automobile sales are made. Incorporation of a luxury car would give it full price range coverage and perhaps add still more prestige to the Kaiser organization that may make it "one of the big four."



Ward M. Canaday (left), president of Willys-Overland, and Edgar F. Kaiser talk over details of the recent merger





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## Scandinavia

(Continued from page 36)

5900 cars from the U.S., 18,000 from Germany, and 17,000 from Britain; French and Italian cars together numbered nearly 10,000. Aside from the imported cars, Scandinavians have access to many American makes which are assembled in Sweden. Assembly factories include those operated by Ford, GM, ANA (AB Nykoping's Automobilfabrik, where Chryslers are assembled) and the Philipsons Automobile AB, a Dodge-Plymouth assembly plant. Denmark has many plants where American cars are assembled, and a huge Citroen plant, but cars from these factories are only distributed to other parts of Europe.

The 500-crown-a-month bank clerk has a number of sources from which he can get a car, but no matter what car he buys, how long he waits to get it, or whether it's new or used, he still has more than initial cost facing him. After he has paid for the car, he faces a yearly tax. The cost is 100 crowns (\$20) for the first 900 kilograms (1985.5 pounds) and 28 crowns (\$5.60) for each additional 100 kilograms (220 pounds). On a Ford or Plymouth, the total yearly tax amounts to about 226 crowns, or \$45.

The next assessment is the registration levy. This costs only \$3.40, but the car can't be driven from the showroom until it is insured with *Trafikforsakring*, or traffic insurance, which costs about 500 crowns, or \$100. In America, this is known as liability insurance. It is then up to the buyer to invest in fire, theft, and collision insurance. For a Ford valued at \$3000, this insurance will cost our clerk about \$96, if he takes the risk of the first 1000 crowns himself; converted to American money and terminology, this adds up to a \$200 deductible-type policy. So insurance fees cost another \$200. Judging from this, it would seem logical for the clerk to wait a year for his lightweight, low-cost, four-wheeled snowmobile.

Here are the cars that Scandinavians are buying: Of the 18,000 cars imported from Germany, 12,000 were Volkswagens. The majority of the British imports were small cars like the Austin, Morris, and Hillman. Sweden's own Volvo heads the best-seller list, with the Volkswagen running a close second. Of the U.S. cars imported in 1951, Chevrolet was the top seller, with Ford and Plymouth following in that order. Car-buying is not limited entirely to small economy cars, for two Rolls-Royces and not less than 21 high-priced Daimlers came from Britain in 1951.

A great many Swedes, Danes, and Norwegians would like to order some of our middle and higher-priced cars to enjoy riding comfort not found in their own cars. But even if they could afford the first cost of an American easy chair on wheels, the majority would be forced to settle for only the most economical cars like Willys and Studebaker because of gas and oil prices in Scandinavia. Gasoline (*benzin*) costs about 45 cents a gallon; oil is about the same as here. To the Norwegians and Danes, this is

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a fantastic price, for before the war, gasoline sold at one-quarter what it costs now. Another operating cost is a heated garage—a necessity in cold winters. In the suburbs of Stockholm a heated garage costs from \$10 per month, or a little less than a furnished room in a middle-class apartment house.

Tourists can rent cars very cheaply in all the Scandinavian countries, and tour the land of the Vikings over a vast network of first-class highways. The Swedish section of the Monte Carlo Rally is just one of the many attractions inviting sportsmen from all over the world. Travelogues describe Norway's breathtaking fjords, Denmark's beautiful coastlines, and Sweden's sunny archipelagos as a paradise in summer; then they change to a winter wonderland—and that's where the travelogue ends and the fun begins. Care to try your hand at stock car racing—on ice?

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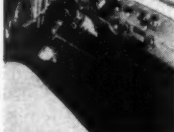
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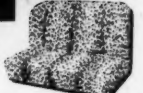
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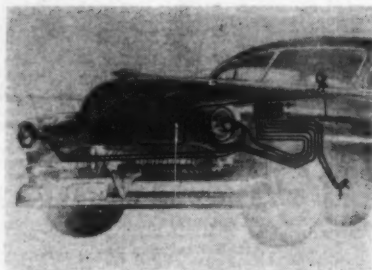
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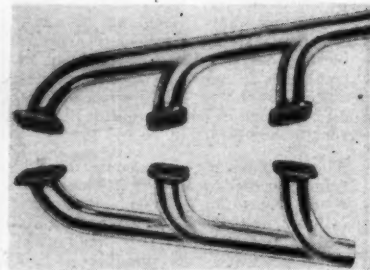
# TRENDS IN PRODUCTS



**THE TECHTRONIC EYE**, an automatic headlight dimmer said to last four times the life of your car, is guaranteed by the manufacturer never to be slow on the flip. Its claims are headlined by safety, courtesy, and certainty (if you forget, the "eye" will remember). Manual control is not interrupted with the Techtronic Eye installed. Power drawn is slight. MT-101.



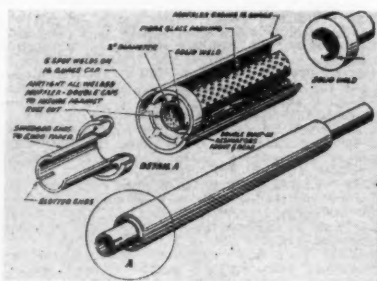
**NO "GIMMICKS"** needed to put these snow chains on your car, says the maker of "Minit-On." The secret lies in a patented, semi-rigid cable, which replaces the usual inner side chain. Available with either regular chains or the T-bar reinforced type, the Minit-On package includes rubber spreaders, S hooks, and plastic sleeve protectors for a neat job when you're dressed up. MT-102.



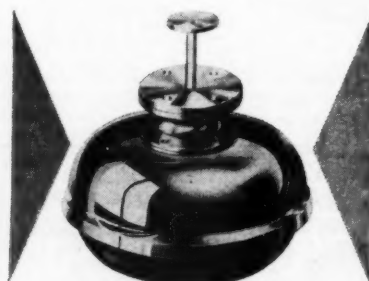
**THIS NEW HEADER** system does much to eliminate the back pressure which causes poor combustion, decreased power, and increased engine temperature, according to the Douglass Muffler Co. Header sets are available for most popular makes and models, including the Power Flow Set for 1950-53 MG-TDs. The maker claims quality, efficiency, fair price for its trademarks. MT-103.



**IT'S THE NEWEST** and most complete illustrated catalog for speed and power, says Bell Auto Parts. Its 44 colorful pages feature nationally advertised products, up-to-date facts and information, and everything for the speed and power enthusiast. The catalog is now available to dealers and consumers. Price is 50 cents (refundable upon first purchase). MT-104.



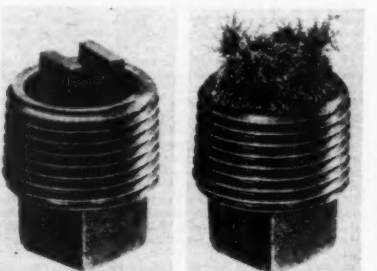
**THE GLASPAC** muffler is said to be designed to rigid specifications that eliminate weak spots. Its claim for long life centers about 16-gauge seamless steel casings, solid welds, air-tight double caps, Fiberglas packing, and double, built-in resonators, front and rear. The company says tone is deep, price popular. Free catalog is available on request. MT-105.



**BELIEVE IT** or not, the quiet, unhurried, romantic island of Bermuda provided the inspiration for an automotive accessory. Called the "Ding-Dong" Bermuda bell, it is patterned after the resonant bells used on the "Old World" Bermuda carriages. According to the maker, the "Ding-Dong" bell is rust-proof, and will outlast the life of any car. MT-106.



**A NEW DUAL-CARB** intake manifold has been announced by Offenhauser. Designed for 1932-48 Fords and Mercurys, the new unit boasts that it is the only one available which permits both the fan and generator to remain in their original positions on all models, '32 and up. Manifolds are also available for later models. Price, \$42.50, plus tax. Polished, add \$4.95. MT-107.

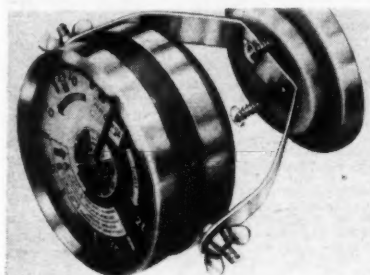


**AUTO INDIGESTION?** The makers of Lisle Magnetic Plugs say their set of three drain plugs (\$1.95) for crankcase, transmission and differential will catch metal particles and hold them until the plug is removed and wiped off. Specify year, make, model of car, and type of automatic transmission, if any. Special designs can be supplied to fit your needs. MT-108.

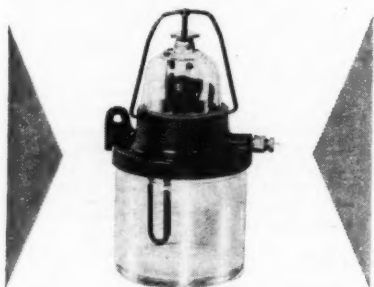


**A SPECIAL** sealed-beam lighting unit, similar to those used as aircraft landing lights, has been adapted for 12-volt automotive lighting systems. The "Speed-Lite" produces 200,000 candlepower, with a spread of 11 degrees horizontally, and five degrees vertically. A six-volt model (used with a relay) is also available. Price for either type is \$11.95. MT-109.

This department is not composed of paid advertising. All items listed are guaranteed for immediate refund if you are not satisfied. If you want to buy any item or items, or obtain additional information, write to **TRENDS IN PRODUCTS**, 5959 Hollywood Blvd., Los Angeles 28, Calif. Be sure to list the items by number for identification.



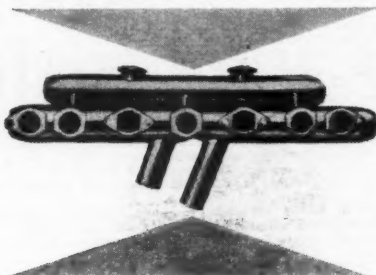
**THE PERFORMETER**, according to the manufacturer, will give readings of three totally different, but equally important factors, each responsible for both performance and safety. They are: (1) actual road horsepower, (2) engine and chassis resistance, (3) brake condition. The instruments are available in different sizes, with varied mounting brackets. Guaranteed. MT-110.



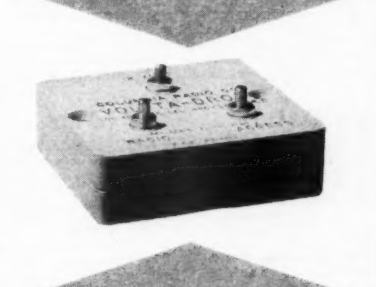
**TIRED OF POURING** solvents manually through your car's air intake? That day is past, according to the manufacturer of the new Automatic Tune-Up Injector. The injector shoots a one-ounce charge of solvent into the upper engine chambers at regular intervals (a one-ounce shot, because the more shots, the less the amount needed). Unit comes complete with fittings. MT-112.

**THE SEE LEVEL** not only shows the level of brake fluid at all times, but serves as an auxiliary master brake cylinder, according to the manufacturer. Mounted on the firewall, the reservoir can be checked or filled anytime the car's hood is raised. Die-cast, with a Pyrex glass reservoir, the automatic dispenser can be installed with no special tools. Three models cover all cars. MT-114.

**INTERNALLY RIBBED** for extra strength, the new "Canadian Sportsman" high compression heads are said to be built to stand up against the rough usage expected from them. Made of aluminum, they are "something new and different in the way of heads," says the manufacturer. The "Canadian Sportsman" heads are available in two ratios—7.5 and 8.5 (figured on a stock Mercury 3 $\frac{1}{16}$ -in. bore and 3 $\frac{3}{4}$ -in. stroke). MT-116.



**A COMBINATION** dual expansion header and dual intake manifold for Chevrolets is now being marketed. The expansion headers are said to have several times larger volumetric capacity than either ordinary manifolds or ordinary headers, and the dual intake manifold allows the use of twin carb setups. Price is \$62.50 (less carbs and dual muffler system). MT-111.



**WITH A VOL-TA-DROP** resistor, it is no longer necessary to buy special 12-volt radios or accessories, says the maker. It can be used in cars, planes, boats, or anywhere a six-volt source is needed. The compact resistor can be used with six- or eight-tube radios with PM or dynamic speakers, and contains elements for six-volt accessories. Price, \$2.95. MT-113.

**FRAMED IN GOLD-SPLASHED** antiqued mirror shadow boxes (8 $\frac{1}{2}$  by 10 inches), original caricatures of early American cars are said to be perfect for the living room, den, bar, or office. Finished in sepia tones, these Edgecraft Creations are available in a series of 10 prints, from a 1903 Ford to a 1912 Maxwell. Ideal for gifts, the decorative drawings are \$9.95 a pair. MT-115.

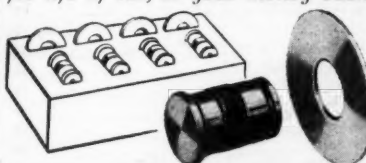
**YOUR NAME**, girl friend's name, or any other word (or words) up to a dozen or more letters can be cut on special machinery in distinctive letters, which, according to the maker, will appear to have been individually designed. Made of solid brass, the chromed Custom Nameplates are flexible enough to be mounted on any flat or curved surface just by drilling holes for the pre-threaded mounts. MT-117.

# "Chevys"

## Stop On A Dime!

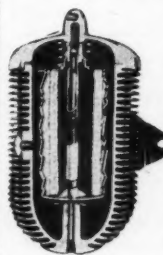
### New Conversion Kit Doubles Brake Power

Changes present old-style brakes to powerful, self-energizing, Bendix type as used on latest Cadillacs, Oldsmobiles, Buicks & Chevrolets. Kit contains all necessary parts and complete instructions for easy 30-Minute Installation. Fits all Chevrolets from 1936 thru 1950. *Guaranteed for life of car, or your money back!*



**Only \$375 Postpaid**  
**ORDER YOURS TODAY!**  
(See Coupon Below)

## Only Filcoolator COOLS as it Filters



Heat is the enemy of efficient engine lubrication. Filcoolator's die-cast cooling fins dissipate heat so that only clean, COOL oil goes back into circulation. Filcoolator will pay for itself by saving oil and engine repairs. Fits any car or light truck. Uses standard replacement

cartridges. Fully guaranteed, complete with bracket and element. Regular **\$975**  
model, postpaid.....  
Chrome Plated.....\$13.75

### Order By Mail

## BARLECS

4504 W. Pico Blvd., Dept. 7  
Los Angeles 19, Calif.

Barlecs, 4504 W. Pico, Los Angeles, California  
Dept. 7 ☐ Chev. Brake Kit ☐ Filcoolator\*

Name.....

Address.....

City.....

Zone.....

State.....

\*Make..... Yr..... Model.....

☐ Ship prepaid  
Check Enclosed

☐ Ship COD  
plus charges

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## SELL (Continued)

'51 PACKARD FOR A TALL MAN, one owner, never damaged, perfect condition, business coupe, altered interior, many extras, never raced, must ride to appreciate. J. Halstead, 13825 S. Indiana Ave., Chicago 27, Ill.

'48 LINCOLN CONTINENTAL conv.; superb body and mechanically, new top, boat, tires, '53 Olds 98 engine, unable to trade or deliver, \$2950. Dr. J. Pembler, 508 W. Milwaukee St., Janesville, Wisc.

'53 PORSCHE coupe, 1500 Super, perfect, less than 4000 miles, radio, heater, never raced, good discount. C. Bright, 2104 W. 13th, Spokane, Wash.

'41 CADILLAC 4-door conv. sedan, new Hydra-Matic top, upholstery, body good, runs good, best offer. K. Byrne, 121 E. 69th St., Kansas City 13, Mo. JA 2839.

'50 MERCURY BLOCK; ported, relieved, 3 1/2 bore, new cam bearing, adjustable tappets, valves, Lincoln springs, guides, keepers, all perfect, never run, you pay freight, \$135. L. Del Dotto, 1016 Sherman Ave., Evanston, Ill.

'49 MERCURY ENGINE; complete, ready to run, stock, 37,000 miles, burns no oil, with clutch, guaranteed no cracks, \$160, you pay freight. L. Del Dotto, 1016 Sherman Ave., Evanston, Ill.

'30 CHRYSLER 44 SEDAN, perfect shape, 41,000 actual m.e., will go anywhere, \$185. B. Sjostrom, 524 N. 5th, St. Peter, Minn.

ROLLS ROYCE PHOTOS, rotogravure article showing four classic Rolls, engine c.o.p.s., send \$1. Also have large selection of Rolls P-1 and Ghost parts. W. Small, 3458 Shenandoah Ave., St. Louis, Mo.

490 CHEVROLET coupe, partly restored, has 5 new tires and tubes, \$350. L. Grotewold, Larchwood, Iowa.

'19 OLDSMOBILE 34 ton truck, excellent body and box, but needs paint, needs engine work, \$275. L. Grotewold, Larchwood, Iowa.

ROAD CAR built from two-man Indianapolis body and frame; engine Hudson Terraplane six, Ford axles, brakes, racing header, four inch diameter tailpipe, \$475. P. Sharples, 3824 Darby Rd., Bryn Mawr, Pa.

'27 ESSEX in excellent running condition, wood wheels, good tire, ready to go, \$150. G. Miller, Rt. 2, Belleville, Ohio.

'52 JAGUAR C-1UPE, metallic brown, always garaged, never raced or abused, straight through exhaust, best offer over \$3000. D. Hinrichs, Rt. 1, Box 30, West Linn, Ore.

## WANTED

'28-'34 CADILLAC sport coupe, conv. coupe, roadster, state condition, price and possible means of delivery. R. Schoen, Myrtle Ave., Langhorne Rd. #3, Pa.

TOP BOWS for any pre '30 model roadster or touring, identify in reply, 4 30x3 1/2 tires and tubes, parts for '18 Overland Model 90-T. A. Francis, 218 Castlewood Dr., Lexington, Ky.

FOUR CYLINDER STUTZ, any model or year, any condition. \$25 reward for leads that result in purchase by me. F. Edwards, 839 March Rd., Menlo Park, Calif.

EXHAUST MANIFOLD for F head engine of '29 Hudson Super 6. Also rear phaeton wind-shield, state price and condition. R. Brown, 3907 E. Lancaster, Ft. Worth, Texas.

LINCOLN CONTINENTAL conv., any year, prefer '41, body, interior, chassis must be in superior condition, no repaired wrecks, reasonable cash price paid, want Oct. delivery. Lt. R. Roseberry, 062078, Hq. 2nd T. Major Port. APO 503, PM, San Francisco, Calif.

STODDARD-DAYTON or parts for same. What have you? B. Nance, 3609 Ingraham St., San Diego 9, Calif.

BODY PARTS for a '38-'39 Cadillac V-16. Need '39 V-16 grille and running board ends, can use grille from '37-75 or V-16, '38-75 or V-16, name your price. D. Cole, 600 E. Long St., Columbus 15, Ohio.

'34 CADILLAC V-8 conv. in good condition or restorable. D. Cole, 600 E. Long St., Columbus 15, Ohio.

FOUR CYLINDER CADILLAC in restored or restorable condition, name your price. D. Cole, 600 E. Long St., Columbus 15, Ohio.

V-16 FIVE-PASSENGER conv. or roadster, any condition. D. Cole, 600 E. Long St., Columbus 15, Ohio.

'37 CORD MODEL 812 Beverly or phaeton preferred, supercharged or standard in running condition, write stating price, send photos, within 500 miles of Norfolk. G. Peacock, 5109 Geo. Wash. Hwy., Portsmouth, Va.

'24-'25-'26 CHRYSLER Six, any model, premium paid if condition warrants, anywhere in Northwest if drivable, interested in any condition if near Seattle. C. Lavender, Portage, Wash.

'41 PLYMOUTH CONV., must be in solid, immaculate condition, no rust, no wrecks, send complete description and price first letter, prefer Ill. area, or anywhere. W. Buwalda, 284 W. 107th St., Chicago 28, Ill.

\$18 FOR INFORMATION resulting in purchase of un-restored antique or classic, must have all major parts, price must be reasonable, located in Southeast. C. Divine, 205 First Ave., Albany, Ga.

WILL PAY \$3 for information leading to purchase of a '41 Super Eight Packard Six wheel, two-door conv. coupe, model 180. R. Wilkie, Sunset Lane, Pompton Plains, N.J. Terhune 52556.

WINDSHIELD FRAME for '31 Model A Ford roadster in good condition, also original wiper motor for

same. R. Gerrits, 5719 N. Milwaukee Ave., Chicago 30, Ill.

NEEDED FOR '37 K LINCOLN: 2 hub caps, hood ornament, right and left taillight assemblies, and maintenance manual or other instructive publication. Lt. JG C. Birdwell, Box 1070, US Naval Post-graduate School, Monterey, Calif.

OLDER MODEL heavy or light, must have low mile age, and be A-1 state of preservation, give complete details, asking price and photo, will pick up. P. Anderson, 2680 Ulita St., Denver, Colo.

DESIRE FOLLOWING MAGAZINES: Motor Trend Vol. 1, number 4; Road and Track Vol. 1, numbers 1, 4, 6, 7. Will pay good price. A. I. C. R. Logie, 34th ADD Box 177, Kirtland AFB, N. Mex.

MARMON; any model or year, fair condition, pay cash. R. Stevens, 242 W. Jefferey St., Kankakee, Ill.

AXLE SHAFT, '28 or '29 Packard big 8, 640-645, length 33 3/4 ins., 6 splines, threaded, app. 2 ins. diameter at bearing space. T. Bibler, 3338 Askew, Kansas City, Mo.

TIMING GEAR, headlight switch, taillight lens, 20 ins. rims and carburetor in good condition for '28 Chevrolet car. J. Ingram, 203 Kingston St., Lenoir City, Tenn.

'39-'40 MERCURY club coupe with chopped top, within 300 mile radius, send price, pic, and info. pics returned, all replies answered. J. Woodman, Box 1603, Shelton, Nebr.

OLD TRUCK, would like to buy early light delivery truck, suitable for or already restored, p.e.a. send pic and price. C. Hoffberger, 1517 N. Gay St., Baltimore 13, Md.

'41 GRAHAM HOLLYWOOD Motor manual, headlights, taillights, for same. Wanted in good original condition, state price in first letter. P. Post, 34 1/2 Bartlett St., Beverly, Mass.

## SELL OR SWAP

'52 J2X CHRYSLER ALLARD, trailer, special paint, spare engine, too hot for me. Capt. C. Doyle, Northwest Airlines, Wald-Chamberlain Field, Minneapolis, Minn.

'35 PIERCE ARROW four-door sedan, 40,700 miles, wire wheels, \$450 or swap for '29 to '33 Auburn boatailed speedster. P. Brown, Rt. 9, Box 354-F, Oklahoma City, Okla. PE 28818.

'37 HANDMADE MERCEDES BENZ conv., engine completely overhauled, a genuine classic, 5-passenger, black, will accept cash or late model American car. C. Fox, 111-11 157th St., Jamaica 4, N.Y.

'30 PIERCE ARROW sport coupe, good tires, paint, new top, drive anywhere, \$395. Swap for 1/2 ton pickup or antique toy trains. F. Cox, 4310 Park Blvd., San Diego 3, Calif.

'37 PACKARD EIGHT DIETRICH conv. sedan, top appearance, mechanical condition, new Detzler lacquer, \$1000 or swap on Jaguar coupe. F. Conmy Jr., 1442 6th St. So., Fargo, N. Dak.

'34 PACKARD TWIN SIX sedan, black, 53,000 original miles, best offer or another Packard conv. or club coupe. R. Wilkie, Sunset Lane, Pompton Plains, N.J. Terhune 52556.

## SWAP

'49 LINCOLN COSMOPOLITAN sedan in perfect condition every way, 19,000 miles, V-8 160 hp engine fully equipped; for 4-seater conv. Cord, Continental, early Jag, Triumph, etc. in top condition, N.Y. area. B. Goldberg, 1732 E. 4th St., Brooklyn 23, N.Y.

GUN COLLECTION CARBINES, Colts plus cash for Crosby or other reasonable sports car within 300 miles. Will mail list of guns and prices. R. Packler, 1908 W. Wells St., Milwaukee 3, Wisc.

'36 SUPERCHARGED AUBURN speedster in showroom condition for Duesenberg. Car is not for sale, no cash offers or phone calls. S. Lopez, Bear Hill Estates, Rt. 311, Tanners, N.Y.

'26 MODEL T FORD sedan in fair condition for a new Mercury or souped up Ford engine. F. Tepner, Box 47, Creighton, Nebr.

## NEXT MONTH

Have you ever wondered just what you should do to your car with winter coming? Then you won't want to miss

### "PREPARING YOUR CAR FOR WINTER"

Also featured:

"The Russian Automobile Industry"

"Driving in Mexico"

"Customizing Your Car at Home"

And don't miss

"The Road Race with International Good Will"

All in the new MOTOR TREND, combined with Auto Sportsman.

ON YOUR NEWSSTAND  
October 25th



## EDITORS' IMPARTIAL TESTS PROVE:

# New Self-Charging Battery Outlasts, Outperforms Others 221%

A few months ago, we started producing a new battery which we frankly believe to be many years ahead of its time. When we announced that this new battery developed 15 amperes more power than other batteries and would automatically bounce back to life again and again after being deliberately and completely discharged, technical editors of leading magazines raised their eyebrows.

When we added that we had named it the *Lifetime Battery* because of its *life* (meaning exceptional power) and the *time* it would last (3 to 4 times as long as ordinary batteries), and that we guaranteed it for *six years*, these editors were understandably doubtful, to put it mildly. One publisher, in fact, refused to accept advertising for this battery until what he then considered to be our extreme claims were carefully tested.

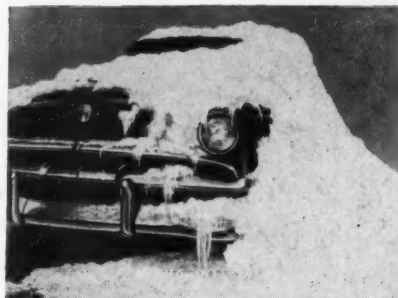
One of the editors said: "Let us test this battery, any way we see fit. If it does what you claim, it's news our readers will be interested in. If it's no good, our readers will be interested in that, too, and that's the way we'll write the story." We said "go ahead" and they took a standard *Lifetime Battery* off the production line and went to work.

You may have read the result of the first test in a famous automotive magazine (name on request). Using two well-known batteries (possibly the best-known high-quality batteries in the world) for comparison, they first ran the *Lifetime Battery* down completely and let it re-charge itself automatically. They repeated this test 43 times the first day, then compared its strength with the other two batteries. Results: the *Lifetime Battery* was 204% stronger than the strongest of the other two batteries. They discharged the *Lifetime Battery* another 20 times, allowing it to re-charge itself automatically each time, and compared all batteries again: the *Lifetime Battery* was now 213% stronger than one battery, 221% stronger than the other! Next, they put a punishing 300-amp load on the *Lifetime Battery*; it survived that in good shape. So they repeated the self-recharging test again and finally concluded: "...unprecedented life expectancy... remarkable recuperative characteristics... outperformed the others in every respect and by a comfortable margin... an outstanding value."

The editor of another magazine (name on request) heard about the tests and asked to "give the thing a *real* test, one that would burn up the average battery." We gave him the *same battery* and challenged him to "finish it off." He installed it in his own car and drove the car on the *battery alone*, shifting gears as he would normally, until his "fingers were sore from holding the starter key... I hate to admit it, but I was outlasted by a battery."

Still another editor wrote: "...definite battery improvement... greater recuperative power, greater initial output... obviously high quality."

*During independent tests in Alaska and the U.S., the Lifetime Battery was intentionally discharged under sub-freezing conditions, re-charged itself automatically & started car at once!*



### Engineered for Cold Climates

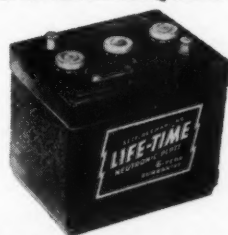
Soon after the *Lifetime Battery* went into production, we selected a few dealers in northern U.S. and Alaska, shipped them a few batteries and waited to see how the dealers and the public would react. Our Alaska dealer told us that before presenting it to his customers, he was going to give the battery an Arctic test: discharge it completely then freeze it at 30 below zero for 72 hours. Result: the battery had recharged itself and immediately started the car. Immediately we received a telegraphed order from Alaska for \$6,043 worth of *Lifetime Batteries*!

### 6-Year Guarantee Saves You Up to \$107

The average deluxe battery lasts 1.4 years at a typical cost of \$25.00, or \$107.00 for a 6-year period. This arithmetic is making sense to people who are tired of throwing money away on batteries that just won't hold up. We believe it will make sense to you, too—particularly since the *Lifetime Battery* you buy now can easily be transferred to your new car whenever you trade in.

### 12-volt and 6-volt Available

Here's more arithmetic that makes sense: the *Lifetime Battery* sells in the U.S. at one price for all cars: \$29.95 for 6-volt, \$34.95 for 12-volt including excise tax.



### Supply Limited: Order Today by Mail!

Although plant facilities are being expanded, supply is still limited. If your dealer can't supply you, order direct by mail from the factory; we pay freight.

**CONTINENTAL MANUFACTURING CORPORATION (Marketing Division, Consolidated Engineers)**  
Dept. MTB-10, Washington Boulevard at Motor Avenue, Culver City, California

### Dealers NOW BEING APPOINTED TO HANDLE DEMAND

Dealerships are now being awarded to take care of demand generated by \$1,000,000 advertising campaign plus articles in national magazines. Write today for full information, including reprints of editors' tests and case histories from present dealers.

Continental Manufacturing Corporation, Dept. MTB-10  
Washington Blvd. at Motor Ave., Culver City, Calif.

Please ship *Lifetime Battery* at once:

- ☐ 6-volt (\$29.95 including tax)  
☐ 12-volt (\$34.95 including tax)

for

(make, model, year of car)

- ☐ I enclose cash, check, or money order: you pay shipping cost.  
☐ I enclose \$5 deposit, will pay balance & shipping costs C.O.D.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

Zone \_\_\_\_\_ State \_\_\_\_\_



# is PETROTOXICOSIS Killing Your Car?

## STOP OIL POISONING with the new *Filterall* PERMANENT OIL FILTER CARTRIDGE

"Oil Poisoning" causes 97 out of every 100 cars in America today to be junked prematurely. Part of this Billion-Dollar annual waste comes out of your pocket! By the time you finish reading this, you will know how a new scientific development can stop this destructive action in your car, let you drive up to 10,000 miles without changing oil, and add years to your car's useful life.



If your car is "dime-ing you to death" for repairs, chances are that "oil poison," (carbon, dirt, and abrasives carried by the oil stream) has been grinding away the precision surfaces of engine parts, causing power loss, overheating, and gas & oil waste. Ordinary filters, like the ones furnished on most new cars can't stop this constant deterioration. The industry's engineers were baffled, until...



The new Lifetime cartridge is made of millions of microscopic bronze balls fused into a cone-shaped wall through which all oil must pass. It is not affected by temperature change or crankcase dilution. It causes less pressure drop than any other type, will not screen out protective detergents, and is the only medium known that will not by-pass cold oil.



During the war, filtration experts, cooperating with top metallurgists, developed for aircraft use entirely new kind of oil filter cartridge, one efficient it traps dirt particles as small as 39 millionths of an inch; so simple, it requires practically no maintenance; and so durable, it lasts—literally for a lifetime! This same new filter is now available to protect your engine from dirty oil damage.



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